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The Army Science Board examined how the Army could use Talent Management (TM) principles, technologies, and best practices to improve its recruitment, training, retention, and promotion processes. The study was limited in scope to Active Duty Officers with the intent to identify practices that could scale Army wide if adopted. The study team made several findings regarding the division of the Army's current personnel management system, opportunities to leverage current technology in training, and opportunities to employ data analytics across the Army's TM enterprise. A specific finding addressed the need for the Army to grow its "strategic bench," that is, to retain and promote young officers demonstrating talents beyond operational acumen and showing promise in strategic matters. Based on these findings, the study team recommended the Army work toward developing an Integrated Talent Management Enterprise (ITME) to consolidate its TM efforts. The ITME would include a TM Proving Ground to test the latest, best practices for applicability to the Army, as well as a TM Systems Integration Laboratory to test and employ the best TM technologies.

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Army Science Board

Final Report
Fall 2015

Talent Management and the Next Training Revolution

Department of the Army
Office of the Deputy Under Secretary of the Army
Washington, DC 20310-0103

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DEPARTMENT OF THE ARMY
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ARLINGTON, VA 22202

18 July 2018

DUSA-ASB

MEMORANDUM FOR SECRETARY OF THE ARMY

SUBJECT: Final Report of the Army Science Board, "Talent Management and the Next Training Revolution"

1. I'm pleased to forward the final report of the Army Science Board (ASB) study titled "Talent Management and the Next Training Revolution." The purpose of the study was to develop a conceptual framework for talent that the Army could use through 2030, to evaluate current technologies used in talent management (TM), and to develop an implementation plan to guide the Army in transforming to a TM model. The scope of the study was the active component officer corps, as it was deemed the "one, certain, high-payoff investment the Army has always relied on." It was also a sufficiently large group to ensure findings and recommendations would scale well when applied Army-wide.

2. For this effort, the ASB brought subject matter experts in Education, Medicine, Physics, Statistics, Anthropology, Computer Engineering, Chemistry, Political Science, Psychology, Mechanical Engineering, Neuroscience, acquisition, and a variety of military operations and technologies, as well as former Army and Sister Service leaders. During its six months together, the study team conducted sixty-nine data gathering interviews among Army and DoD agencies, Federally Funded Research and Development Centers, Academe, and commercial industry. It also conducted a review of the literature comprising over two hundred and seventy articles, papers, and reports.

3. From their work, the study team made several findings regarding the division of the Army's current personnel management system, the opportunities to leverage current technology in training, and similar opportunities to employ data analytics across the Army's TM enterprise. A specific finding addressed the need for the Army to grow its "strategic bench," that is, to retain and promote young officers demonstrating talents beyond operational acumen and showing promise in strategic matters.

4. Based on these findings, the study team recommended the Army work toward developing an Integrated Talent Management Enterprise (ITME) to consolidate its TM efforts. The ITME would include a TM Proving Ground to test the latest, best practices for applicability to the Army, as well as a TM Systems Integration Laboratory to test and employ the best TM technologies. Finally, the study team recommended the Army take deliberate steps to design a pilot project that would begin to build a talent pool for critical, strategic leadership positions. The team advocated that effort should include identifying the critical positions in the Army, selecting and managing development assignments to create "best-fit" candidates, and allowing candidates to self-nominate to avoid limiting the talent pool by traditional considerations of operational resumes.

SUBJECT: Final Report of the Army Science Board, "Talent Management and the Next Training Revolution"

5. The study team's findings and recommendations were presented to the ASB in plenary session at the University of Virginia, Darden School of Business, on 18 September 2014. The Board adopted the findings and recommendations by unanimous vote.

6. I hereby endorse the findings and recommendations in this report.

Leonard W. Braverman
Chairman

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EXECUTIVE SUMMARY

The Army relies on the initiative, skill, and commitment of its Soldiers. As General Creighton Abrams is often quoted, "Soldiers are not in the Army. Soldiers are the Army."[1]

Recognizing, recruiting, and deploying talent isn't new to the Army; it has managed talent since its inception in 1775. President Thomas Jefferson practiced talent management (TM) when he selected Captain Meriwether Lewis to lead the Corps of Volunteers on an Expedition of North Western Discovery. Jefferson understood selecting the right leader was critical to the success of the mission. In turn, Lewis was allowed to select his team, and recognizing his own strengths and weaknesses, recruited Captain William Clark to co-lead the special Army unit of over forty-five men.

The TM strategies employed to identify the appropriate leaders and to assemble a team suited for the Lewis and Clark expedition are now available at scale.

Like the Lewis and Clark Expedition, current and future Army missions are uncertain, and the Army depends on the agility, innovation and tenacity of Soldiers to accomplish the task. The Army can't predict where it will be executing its missions or the exact mission conditions, but it can educate and train officers to be creative problem solvers, critical thinkers and inquisitive leaders. For example, the Army has developed a list of leadership qualities in FM 6-22 Leader Development, which coupled with guidance in the newer warfighting challenges, adequately define the talent characteristics for 2030. The question is how we attract and retain that talent?

The Secretary of the Army requested the Army Science Board (ASB) focus a study on managing the talent of Active Component officers examining these four questions:

- What is the Army currently doing to select and to advance talented individuals and teams?

- Is it possible to transfer best practices in recruitment, training and retention from other organizations to the Army?

- Does the Army have pockets of innovative TM practices that it should bolster?

- What tools (big data, predictive analytics, etc...) and techniques (customized training) are other organizations using to manage talent?

The Secretary's request wasn't formed in a vacuum. The Army has created a task force to develop recommendations to improve TM, which it defines as:

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[1] https://www.fpri.org/article/2013/05/the-way-of-the-soldier-remembering-general-creighton-abrams/

A deliberate and coordinated process to optimize leader development practices and align talent with current and future Army requirements to improve the individual and the organization. TM is guided by the philosophy of mission command and is complementary to leader development.[2]

The Army's current enterprise personnel management model is based on filling orders in a system where "assignments are based on lack of disqualification,"[3] rather than qualification. Furthermore, Army workforce projections are based on numbers, rather than skills or capabilities. The Army has a proven track record of selecting and developing leaders for tactical and operational assignments under this model, and the system has served the Army well, considering the scale and requirements it must process, far beyond any other personnel system in the world. But to acquire talent under the current system, Army leaders must often innovate and use "workarounds." Thus, the Army's TM system is largely "ad hoc," and requires a lot of extra time, energy, and focus to make it work.

Rather than spending that time and energy on tinkering with the mechanics of the current system to make it produce desired outcomes, the ASB advocates redirecting focus on developing talent. The Army could move its TM system from ad hoc to formal. This would give commanders a more comprehensive view of their Officers' talents. A TM focus would also allow the Army enterprise to "know" the potential of the force, i.e., the untapped talent that resides within the Army. The existing TM process already has critical, operational leader development and other features that will remain important pillars for a future TM framework, especially as applied to the officer corps. It's accurate to think the Army has personnel management activities that will serve as building blocks for a TM framework, and that there are industry best practices poised for transfer that will scale to the Army system. An integrated TM enterprise (ITME) will be an important discriminator to underwrite future Army operational capabilities.

Shifting to TM will take the advocacy of senior Army leadership, because commanders and planners make operational and policy decisions based on two assumptions: first, that the talent will be there when the Army needs it (right person, right time, right job, etc.); and second, that financial incentives (education benefits, bonuses, etc.) will enable the Army to acquire and to retain the talent it needs. The study team found those assumptions have been undermined by the following trends:

1. Increasing task complexity for Soldiers (i.e., more complicated technologies)

2. Increasing competition for talent from outside the military from both private industry and educational institutions offering tuition incentives similar to ROTC.

3. Decreasing pool of those eligible for military service

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[2] ASB Study Team interview at Combined Arms Center (TM Concept paper), Fort Leavenworth, KS; May 2014.
[3] ASB Study Team interview at Human Resources Command, Fort Knox, KY; January 2014.

These trends are driving an imperative to overhaul the ad hoc TM system. Throughout the Army's history, there have been many attempts to transform personnel management policies, and while some changes have been made recently, the Army needs renewed emphasis on the role of leaders to manage talent, on the institution's obligation to identify, develop, and reward talent, and on the enterprise goal of combining talent into teams that produce exceptional results. In short, the Army needs to access its untapped talent and assemble teams for optimum results.

To that end, the study team reviewed over 200 documents about TM in the Army. Many recommendations surfaced multiple times in the literature. From that review and from the several interviews the team conducted, the study team believes the challenges associated with acquiring talent in the field of cyber technology may become the compelling tipping point—the canary in the coalmine—that warns Army leadership of challenges it faces and motivates a serious engagement to shift to TM.

In broad strokes, the ASB advocates for the Army to take four steps in the shift to TM: (1) to focus on the pool of talent; (2) to integrate the TM system under one leader; (3) to test TM advances before introducing them into the overall system; and (4) to reemphasize the role of leaders to develop junior officers.

Specifically, from the research, interviews, and visits conducted, the study team made the following findings and recommendations:[4]

1. Enhance and integrate TM

    <u>Findings</u>:

- Current Army Personnel Management is Distributed, Siloed and lacks unified Senior Leadership

- Workforce Planning does not occur beyond the POM cycle

- Talent Acquisition does not use common talent assessment protocol across the enterprise system e.g. West Point, ROTC, OCS

- Performance management is not standardized across the enterprise system e.g. 360 evaluation/counseling not widely adopted

- ITME is essential for Army to create a quality force capable of meeting global challenges with fewer Soldiers

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[4] All recommendations fall within the Army's purview to execute; none require a change in the Defense Officer Personnel Management Act (DOPMA).

Recommendation:

SEC Army through CSA task TRADOC to design and implement an ITME under a single leader

2. Enhance Army learning and leadership by creating a talent proving ground

Findings:

- Current Army training and education is not fully taking advantage of recent advances in neuroscience research, learning strategies, and educational technology

- Recent advances in sophisticated team design, customized learning, skill development (particularly in STEM) and leadership assessment are not being leveraged

- The Army lacks a TM proving ground.

Recommendation:

SEC Army through CSA task TRADOC to create a TM proving ground to test latest advances

3. Establish an Army ITME Systems Integration Lab (SIL)

Findings:

- Current Army TM System does not have a shared database for Officer management

- Technology infrastructure is not able to support enterprise data access and advanced analytics

- IPPS-A plans to integrate four HR / Financial databases

- AAG-PDE project provides unified / policy access to 250 Army databases

Recommendations:

ASA MR&A Sponsor an Army SIL with the following ITM Functions:

- Scalable data infrastructure using lightweight federated distributed database architecture

- Data management enabled by common data dictionaries and taxonomies

- Web-based portal for global ITM data, data analysis, and report access, controlled by Army roles and policies

4. Create talent pool through broadening assignments

Findings:

- The broadening assignment process is inconsistent across the enterprise, particularly in the Generating Force

- Formal process to identify leader pools for operational assignments

- Siloed process to identify leader pools to fill institutional assignments

- Building junior officer talent pool with potential to operate and to lead Generating Force organization is lacking

Recommendation:

SEC Army task CSA to sponsor a pilot project to build a talent pool for critical Generating Force positions through broadening assignments

- Focus on the Generating Force

- Use predictive analytics, individual assessments and community of practice input to discover junior officers with strategic potential and to make assignments

- Develop and manage officers considering the following:

  – Identify specific developmental assignments and training

  – Create a team to manage the developmental assignments

  – Officers self-nominate; pool does not limit operational assignment consideration

1. INTRODUCTION

The Secretary of the Army asked the Army Science Board (ASB) to conduct an independent review of the Army's talent management (TM) system to gauge best practices from industry, academia and other Armies around the world against the Army's requirements. Because Army Officers of 2030 will lead a more technical force, the ASB was well positioned to gather and examine data in the context of technical trends that will impact our future military personnel.

1.1 TERMS OF REFERENCE (TOR)

Citing the Army's current fiscal constraints and the successes realized by commercial industry after implementing TM systems during their own, similarly constrained budget cycles, the Secretary of the Army requested the ASB conduct this study, pursuing three specific objectives (see Appendix A):

1. To develop a definitive concept of talent the Army could use to describe the individuals and teams it needs to recruit, train, and retain through 2030. The concept should also describe the process of assigning the right person to a position that maximizes team productivity and the overall performance of the Army, while also suiting that individual's capabilities, experience, character, and interests. The concept must be sufficient for inclusion in Army doctrinal publications.

2. To examine and evaluate current technologies in TM (recruiting, training and retention) employed by other organizations, with emphasis in two areas:

    a. Tools, such as information management systems, "big data" analysis, and predictive analytics that can yield significant performance successes.

    b. Techniques, such as revolutionary approaches that customize training to the individual.

    The evaluation should assess the expected performance of TM technologies as applied to the Army, specifically providing estimates for operational improvements to meet talent requirements through 2030.

3. To develop a roadmap for the employment of promising TM systems and associated technologies. The evaluation of best practices and technologies must take into consideration the unique nature of military service. Is it possible to transfer best practices in recruitment, training and retention to the Army? It should also make use of, but not be constrained by, current performance metrics used by the Army, and identify innovative TM practices in the Army that should be bolstered and/or advanced. Consistent with the other objectives, the roadmap should meet the Army's personnel requirements through 2030.

1.2 STUDY PANEL, VISITATIONS, AND METHODOLOGY

The ASB compiled a multi-disciplinary study team (see Appendix B) of subject matter experts in neuroscience, predictive analytics, computer science, medicine, engineering, and psychology.

Early on, ASB leadership and the study team determined that the scope of the TOR tasks wasn't feasible under the fiscal constraints and budgetary pressures imposed upon the Federal Government, DoD, and Department of the Army.[5] In consultation with the sponsoring agency, the study team narrowed the focus of the study to the active duty officer corps. With that adjustment, the study team examined TM systems in industry, academia, the Army, and allied and sister Services to identify best practices that appeared promising to scale up to an Army enterprise level.

More specifically, the study team followed lines of inquiry in various areas of TM, to include workforce management, recruitment and acquisition, performance management, training and education, leadership development, advancement and succession management, and retention. In each area, the study team examined current practices in the Army, as well as areas where staffs and organizations were implementing innovative TM programs. The latter included Army leaders who had developed "workarounds" for the current system, with the goal of ensuring their organizations acquired talented officers and kept them on the "right track" for advancement. The study team also visited other U.S. and allied military services, U.S. Federal agencies, commercial industry leaders, and academic institutions, to collect a database of best practices in each of the areas of TM. Throughout the data collecting and interview process, team members focused on tools and technologies used by other organizations that could be adopted for use by the Army. They also looked closely at how other organizations employed TM principles to build successful teams, again, with an eye towards how those techniques might be used by the Army.

Another early determination made by the study team was to clarify what they meant by a TM system. The term "talent management" can cover several differing activities, so for the purposes of its work, the study team defined a TM system as one designed, "to increase talent depth and quality in the simplest, easiest way possible."[6]

In nine months of data gathering, the study team received 69 briefings and interviews from subject matter experts (SMEs) in government, industry and academia, reviewed over 270 articles and reports, and conducted small group, non-attributional interviews with active duty Soldiers.

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[5] The U.S. Government shutdown of 2013 and automatic spending cuts imposed on the U.S. budget (sequestration) impacted the ASB's ability to maintain its active membership and to fund travel and other support functions for members serving on this study.
[6] Marc Effron and Miriam Ort, One Page Talent Management, Harvard Business Review Press, p. x.

1.3 STATEMENT OF THE PROBLEM

The Army has sustained a state of continuous war for the past fourteen years, the longest in our Nation's history. Despite that tempo, the Budget Control Act of 2011, which reduces defense spending by $487 billion over 10 years, requires the Army to reduce its Active end strength from a wartime high of about 570,000 to 450,000. Given these constraints, there's legitimate concern regarding how the Army will maintain its ability to field a professional, capable force that meets mission requirements through 2030.

Historically, the Army has endured periods of transition and uncertainty by relying upon one, consistent, high-payoff investment: its leaders. The training, education, development, and experience of Army leaders form the pillars of the Army's long-term success. Given the Army's fiscal constraints and its projected mission requirements, senior leaders need to determine how the Army will continue to cultivate, manage, and optimize the talent of its leaders during this current period of transition.

The study team considers the following as axiomatic:

- The Army has talented officers and Soldiers in its ranks.

- The Army has a deliberate and well-tested enterprise to recruit, train, advance, and retain those officers and Soldiers.

- In maintaining its status as a fighting force since 1775, the Army has evolved its TM. From the development of a professional officer corps, through the period of mandatory conscription and drafts, through today's all-volunteer force and the emergence of a more specialized Non-Commissioned Officer corps, the Army has adopted new techniques to meet its core mission requirements, while balancing the social and political demands of the nation.

Thus, the study team interpreted the underlying question posed by the Secretary of the Army as whether the Army was positioned to leverage best practices in TM for the foreseeable future, to ensure it recruits, trains, and retains the most talented officers and Soldiers.

Attempts to answer that question must address the complex realities of today: that budgets ebb and flow, end strength increases and decreases over different administrations, technological developments, shifts in strategic focus, and demographic changes in the recruit pool. The Army's recent experiences in Iraq and Afghanistan illustrate how these complexities converge to impact operations on the battlefield. Over the course of these wars, the Army faced new challenges that effected the tactical employment of its forces, such as more distributed operations, the need to conduct full spectrum operations, and the emergence of pervasive media technology, including social media. As a result, the Soldiers in small units experienced increased and more complex mission requirements in a counterinsurgency

environment, often involving asymmetric operations within a larger civilian population. Technology enabled the Soldiers in small units to operate with more independence, making them more isolated from other units and their higher headquarters, while simultaneously making them more connected to family, friends and society (including the media) back home.

If we assume these conditions will persist for the foreseeable future, the Army will need to plan and program a TM strategy that delivers capable leaders, whose Soldiers' actions and decisions will have the potential to produce immediate, and possibly disproportionate effects in the conflict zone, as well as near real-time effects among the U.S. population and the international community. Clear insight into how the Army's current TM system addresses and responds to these complexities is a necessary condition to the creation of any sustainable TM strategy. What characteristics, aptitudes, and skills should the Army seek in its recruits? How will the Army deliberately develop those recruits into the leaders it will need in 2030? And what can the Army do to retain its best leaders? The Army needs to determine where there are efficiencies to be gained throughout its TM enterprise which would foster the solutions to these questions and solidify their place in Army doctrine. In short, an important step in answering the original question about how the Army should manage its talent going forward will require understanding the operating assumptions of the Army personnel system as it stands.

Finally, the study team recognizes that the Army has a culture of its own, and that best practices in TM that come from outside of the Army, regardless of how successful they may have been, may not constitute a good fit within the Army culture and within the strictures imposed by law. Perhaps the best example of this may be the Army's reliance on standardization to ensure all Soldiers maintain proficiency in its designated core tasks. To an outside eye, this may be described as a "one-size-fits-all" approach that emphasizes generic practices over the strategic development of individuals, based on their motivations, experience, preferences, etc. To the Army, however, standardization is crucial to its core function, because if one Soldier falls, another must be able to fill the gap and carry on the fight. Thus, in answering the question about TM, the integration of outside techniques must be carefully assessed, and always with a consideration for the capabilities that are already in place throughout the Army's TM enterprise.

2. BACKGROUND

The study team found two examples of practices (one institutional and one operational) that reveal gaps in the Army's current personnel management system, specifically with regard to how the system manages talent.

First, the study team found evidence of ad hoc talent records. Brigades in Iraq and Afghanistan created Microsoft Excel spreadsheets listing the various capabilities of individuals within the Brigade to leverage their talent as needed during the deployment. This practice was well known, and the data collected was useful. Unfortunately, the data wasn't available to a commander before deployment and wasn't retained after the deployment. The Army as an institution played no role in providing talent portfolio support to commanders.

Second, the study team found evidence of senior officers implementing ad hoc personnel management systems within their commands that were intended to augment the Army system (Fig. 2.0). This was an indication of institutional misgiving, where senior leaders found it necessary to massage and manipulate the system by which they themselves had been promoted, perhaps because their own advancement was a product of similar practices.
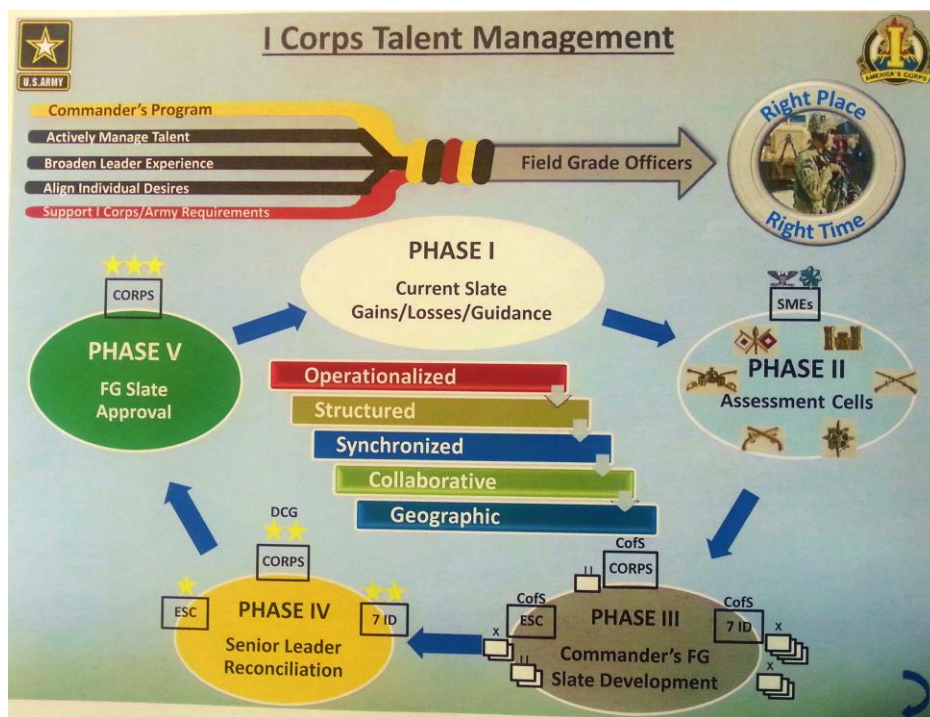

Figure 2.0 I Corps Personnel System

In each of these practices, there's recognition that talented officers need to be identified, managed, and selected for the right jobs. But by their very existence, there's also an implicit belief that the formal Army personnel system is somehow falling short in these endeavors.

To better understand these dynamics, the study team set out to establish a baseline for the Army's current personnel management system. Then, to gauge the Army's approach to TM, the team looked at how the Army chooses officers out of a large pool, and the challenges associated with that enterprise. Finally, a case study looking at talent in the emerging field of cyber operations was used to explore capabilities the Army will need to recruit, develop, and retain in 2030 and beyond.

2.1 ARMY REQUIREMENTS

Senior Army leaders have described a future operational environment that will require the Army to recruit Soldiers capable of performing a variety of mission sets.

> An increasingly complex, dynamic, and uncertain operating environment where smaller, lighter forces will conduct decentralized operation at the tactical level with operational/ strategic implications… It will require influence and Army officers who are able to build trusted relationships with diverse populations and influence coalitions to support the mission.[7]

The Army Warfighting Challenges created by Training and Doctrine Command (TRADOC) acknowledge the operational challenges the Army will face, and the study team identified several that underscore the importance of managing officer talent:[8]

8. Enhance Training – Lead: MCCoE, Primary Support: CAC-T
How to train Soldiers and leaders to ensure they are prepared to accomplish the mission across the range of military operations while operating in complex environments against determined, adaptive enemy organizations.

9. Improve Soldier, Leader, and Team Performance – Lead: MCCoE
How to develop resilient Soldiers, adaptive leaders, and cohesive teams committed to the Army professional ethic that are capable of accomplishing the mission in environments of uncertainty and persistent danger.

10. Develop Agile and Adaptive Leaders – Lead: MCCoE
How to develop agile, adaptive and innovative leaders who thrive in conditions of uncertainty and chaos and are capable of visualizing, describing, directing, leading and assessing operations in complex environments and against adaptive enemies (updated 10 Dec 2014).

19. **Exercise Mission Command –** Lead: MCCoE

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[7] Joint Chiefs of Staff, Mission Command White Paper, 3 Apr 2012; p. 3-ff.
[8] Army Warfighting Challenges, TRADOC, http://www.arcic.army.mil/Initiatives/ArmyWarfightingChallenges/

How to understand, visualize, describe, and direct operations consistent with the philosophy of mission command to seize the initiative over the enemy and accomplish the mission across the range of military operations.

While mission sets may change in the future, the Army's institutional imperative to generate a pool of talented officers and leaders will endure.

2.2 THE ARMY BASELINE AND CURRENT TALENT POOL

The Army defines TM as:

> A way to enhance Army readiness by maximizing the potential of the Army's greatest asset – our people. By better understanding the talent of our workforce and the talent needed by unit requirements, the Army can more effectively acquire, develop, employ, and retain the right talent, at the right time.[9]

To establish a baseline for Army TM, the study group examined how the Army currently conducts officer recruitment, assessment, development, and assignment. The group discovered that little has changed in these areas over the last several decades, despite recommendations for improvement made in numerous, Army-directed studies from the Office of Economic and Manpower Analysis (OEMA), and most recently, the Human Dimension Operating Concept:

> The Army's fiscal realities and other future challenges prescribe the need for a holistic, unifying direction. A comprehensive human capital program management system is necessary to provide accountability, appropriate authorities, informed resource allocation, and proper assessment methods.[10]

The study team noted that OEMA has been examining this issue for 12 years, and the Human Dimension Operating Concept first surfaced in 2008. Thus, the Army as an enterprise has had awareness of the need to address these TM issues, but it hasn't had the time, will, or focus to make them a priority. Current budget realities and renewed focus by senior leadership may provide the necessary forcing functions to focus on improving the talent of the force.

2.2.1 ACCESSION

The Army has a policy of accepting qualified individuals into its officer ranks with little, if any, screening to determine who would best fit the Army's culture. This is in striking contrast to other military organizations, such as the German Army (*Bundeswehr*), which, prior to accession, will interview all perspective recruits for one-and-a half days by trained psychologists and other professionals.

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[9] U.S. Army Talent Management Strategy Force 2025 and Beyond, 20 September 2016.
[10] TRADOC Pamphlet 525-3-7; p. 8.

Moreover, accession criteria for the U.S. Army depends upon the path to entry. For example, after meeting a set of minimum standards set for all recruits, each accession organization, the U.S. Military Academy (USMA)/West Point, Reserve Officer Training Corps (ROTC), Officer Candidate School (OCS), etc., has its own process for selecting officer candidates, and they don't share information on promising candidates.

For example, if a candidate applies for USMA and narrowly fails to gain acceptance, his or her name is not automatically passed on to ROTC as a potential recruit. To put a number on that potential talent pool, there are, on average, 13,000 applicants for a class of approximately 1,300 West Point cadets, and the information on the approximately 12,000 who have a desire to serve in the Army but are not admitted to West Point is effectively lost.[11]

Lacking a screening process to select officer candidates who best fit the military culture, the Army experiences a notable portion of candidates who accept cadet status in USMA or ROTC with the sole intention of serving the minimum amount of time in exchange for a "free" undergraduate education. On average, the Army receives 4-5 years of service from these officers, unless they're allowed to separate before fulfilling their active duty service commitment. The question is whether the investment made in these individuals is returned during that period. For example, four years of schooling a "five-and-dive" USMA cadet costs the Army about $300,000 before he or she serves any time on active duty.

While the study team focused on the officer corps, the lack of a more robust screening process for potential recruits may cost the Army even more in the enlisted ranks. The study group learned that the Army expends something on the order of $900 million each year training personnel to replace enlistees who could not be retained in the Army and leave within 18 months of joining.

These data suggest that extra efforts made to select better candidates would result in higher retention rates. As demonstrated by military services of other nations that employ pre-accession screening techniques, the savings realized from higher retention rates more than offset the cost of these enhanced efforts.[12]

During interviews with various elements of the Army's personnel enterprise, the study team heard arguments against adopting a more selective process. The main concern had to do with scale: that the size of the U.S. Army compared to those of other nations made it impractical for the Army to expend comparable efforts on vetting candidates for enlistment.

While that concern is credible, the study team believes a program targeting the officer corps, which represents less than 20% of the Army (about 80,000 personnel), would scale well. The private sector is addressing numbers of this size and able to screen candidates for comparable

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[11] The study team learned this policy was being reviewed with intent to increase data sharing.
[12] ASB Study Team interview with TRADOC Foreign Officer Liaisons, Fort Leavenworth, KS; May 2014.

pools. In fact, private corporations are using people analytics at scales comparable to the entire Army (Fig. 2.1).

Rank	Employer	Global number of Employees
1	Wal-Mart Stores	2,300,000
2	Kroger	443,000
3	Yum China	420,000
4	International Business Machines	414,400
5	The Home Depot	406,000
6	McDonald's	375,000
7	Berkshire Hathaway	367,700
8	Amazon.com	341,400
9	FedEx	335,767
10	United Parcel Service	335,520

Figure 2.1 Army-Sized Corporations Screening Talent

For example, Walmart, with 65,000 managers and over 2 million associates, has a Global Analytics team with more than 60 data analytic specialists to apply analytical rigor to its personnel management processes.[13] The study team believes promising techniques such as data analytics and talent proving ground lessons learned focused on the Army's officer corps could eventually be expanded to the entire force.

2.2.2 ASSESSMENT[14]

In each of its three primary commissioning sources, the Army collects large amounts of data on its cadets and officer candidates. However, only a small portion of the information follows the newly commissioned second lieutenants into the Army, and most of that pertains to medical history. Even less is known about the talents or skills officers may have acquired prior to entering the commissioning source. The Army treats all this time as formative and allows its second lieutenants to start with a completely clean slate. While this may be commendable for its egalitarian approach, the Army deliberately discards valuable information about its officer corps. Portions of the rest of the data could be collected, sifted, and analyzed to provide a more complete picture of each officer and the talents that he or she has developed.

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[13] Phil Wainewright, How Walmart Honed Its People Analytics to Deliver Business Value, Diginomica, Jan 20, 2017.
[14] While officers are commissioned principally through USMA, ROTC, and OCS, there are direct commissions for Chaplains, medical professionals, etc. The study team focused on the larger commissioning sources.

2.2.3 ASSIGNMENT AND DEVELOPMENT

The Army's current personnel management system is designed to develop tactical and operational leaders, with little regard for skills that may be required within the Army enterprise beyond the Brigade level.

> As a result, virtually all officers are managed not by talents but by a rigid, time-driven methodology, one aimed at identifying and selecting a small pool of leaders for successively higher levels of command.[15]

The Army personnel system manages officers by (1) branch; (2) year group (i.e., the year promoted to their current rank); and (3) additional skill qualifiers (e.g., second language, airborne, or other special qualifications, etc.). The system uses the Officer Record Brief (ORB) to capture that information. The ORB doesn't reflect skills that an officer may have acquired outside of the Army, nor those gained prior to being commissioned.

For example, the Army would have no insight into the talents of an officer who grew up in Liberia with missionary parents and who therefore speaks Gola and other indigenous languages. Occasionally, someone with a mission requirement for those skills may become aware of that officer's talents, and could request that officer, specifically for that skill. The process is known as a by-name request (BNR). But the system has no way to pre-identify a pool of officers who may have those skills.

Additionally, the personnel system cannot tell if an officer has developed, over multiple deployments, strong personal relationships with leaders and members of the community in, e.g., Kandahar, Afghanistan, and thus understands dynamics on the ground better than most. At best, the system may be able to tell the number of deployments, but not the skills that were acquired as a result.

2.2.4 ARMY-UNIQUE CHALLENGES FOR MANAGING TALENT

While the Army may resemble a large corporation in some respects, its distinct function in society, its mission, and the way it carries out its mission, all combine to present unique challenges to managing talent:

- There's only one U.S. Army. In corporations, an individual who is dissatisfied with his or her current job has an opportunity to move from one organization to another in an industry (finance, health, automotive, technology, etc.). In the Army, if an officer is frustrated or otherwise unsatisfied with his or her career, he or she must decide to stay

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[15] Michael J. Colarusso and Colonel David S. Lyle, Senior Officer Talent Management: Fostering Institutional Adaptability; 14 February 2014; p. 6.

in the institution, to cross-commission to another service (which is rare), or to leave the profession entirely.[16]

- Employment with Apple, PepsiCo or Proctor and Gamble does not include an unlimited liability contract. There's no expectation that an employee will risk life and limb to attain corporate goals.[17]

- The relationship between leaders and their subordinates is supported by law and reinforced by culture and policy.[18]

- All senior leaders in the U.S. Army are promoted from within the ranks. The Army doesn't "buy" senior talent–it grows talent.[19] The Chief of Staff of the Army in 2036 is in the Army now.

- Shared "endurance of hardships" forms strong, long-lasting bonds that are rarely duplicated in the private sector.[20]

These broad legal, political, and cultural challenges shape and inform the policies the Army develops to manage its personnel. In turn, those policies have a direct effect upon the ability and degree to which the Army manages talent. The study team conducted an extensive survey of the Army's personnel management system to identify specific effects on TM for the officer corps, both positive and negative, and identified over twenty practices it believes warrant review (see Appendix D).

2.3 FUTURE CHALLENGES FOR ARMY TM: THE WORLD IN 2030

Experts predict that talent will choose "how, when and where it works in the digital age."[21] At the same time, futurists have identified several fundamental "megatrends" that will have a direct impact on future armed conflicts and who the Army recruits and trains to fight.[22]

2.3.1 GLOBALIZATION

Globalization is defined as "the abolition of distance." The International Monetary Fund (IMF) refers to the next generation of globalization "an extension…of the same market forces that have operated for centuries at all levels of human economic activity."[23] The IMF also describes

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[16] Ibid. p. 8.
[17] Ibid. p. 8.
[18] Ibid. p. 8.
[19] Ibid. p. 8.
[20] Ibid.
[21] George Vielmetter and Yvonne Sell, Leadership 2030, The Futurist Magazine, p. 86.
http://www.wfs.org/blogs/thomas-frey/when-it-comes-jobs-why-time-different
[22] Ibid.
[23] Ibid. p. 15.

the four dimensions of globalization as movement of capital and investment, trade and transactions, distribution of technology, information and knowledge, and—most importantly for managing talent in the future—the migration and movement of people.[24] Employers will be tapping the globe for talent in the future, but the U.S. Army cannot tap the globe for its talent pool.

In addition, Asia will begin to dominate the global economy. "By 2030 Asia will have surpassed North America and Europe combined in terms of global power based upon GDP, population size, military spending and technological investments."[25] The Institute for Strategic Studies projects that by 2027 "Chinese military spending could actually surpass that of the U.S."[26] These projections represent a significant shift in global affairs, as the U.S. has been considered the world's largest economy since 1871.[27] As Asia, in general, and China, in particular, enjoy economic growth, there will be a narrowing gap in military capability between the U.S. and China.[28] One area the U.S. can counter these trends and continue to assert its dominance lies in the development of its military leadership.

2.3.2 DEMOGRAPHICS

There are three dimensions to changing demographics: population growth, migration, and aging societies. World population is both increasing (the global population is projected to reach 8 Billion by 2025) and aging, especially Western populations, including the U.S. At the same time, the birthrates of some of our Asian partners are declining. "South Koreans will be 'extinct' by 2750 if nothing is done to halt the nation's falling fertility rate."[29] With a fertility rate of 1.19 children per woman, Korea now ranks as the lowest in the world. As these dynamics play out, the overall result will be a shrinking talent pool for work (Fig. 3.2). "In some of these countries—notably Germany—companies are already feeling the pinch, struggling to find qualified people to meet workforce demand."[30] These demographic trends will also have implications for the Army, as the U.S. population ages and the talent pool for young people able to serve dwindles.

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[24] Ibid. p. 17.
[25] Gideon Rachman, Easternization, Asia's Rise and America's Decline, Other Press, 2016, p. 11.
[26] Ibid. p. 44.
[27] Ibid. p. 34.
[28] Ibid. p. 44.
[29] Tom Frey, Future Work Trends blog (quoting the British Telegraph).
[30] Ibid.

Figure 2.2 Global Labor Shortages in 2030[31]

The decreasing labor pool will place a premium on human resources and competition for talent will increase. Employers—and nations—will compete globally for talent.[32] For example, by 2030, half of the people in Western Europe will be over the age of 50 and a quarter of them will be over 65.[33] European corporations will have to look outside of Europe to recruit talent.

Demographic changes will take place in the United States that will shape the Army's future talent pool (Fig. 2.3) as well.

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[31] Rainer Strack , Jean-Michel Caye , et. al., Creating People Advantage 2014-2015: How to Set Up Great HR Functions, Boston Consulting Group, Dec 2014.
[32] George Vielmetter and Yvonne Sell, Leadership 2030, p. 98.
[33] Ibid. p. 99.

US population by group

The charts show the change in population composition between today and 2045.

2045

2012

African-American   American Indians

Asian-American   Hispanic   White

Source: US Census Bureau and UN Population Division
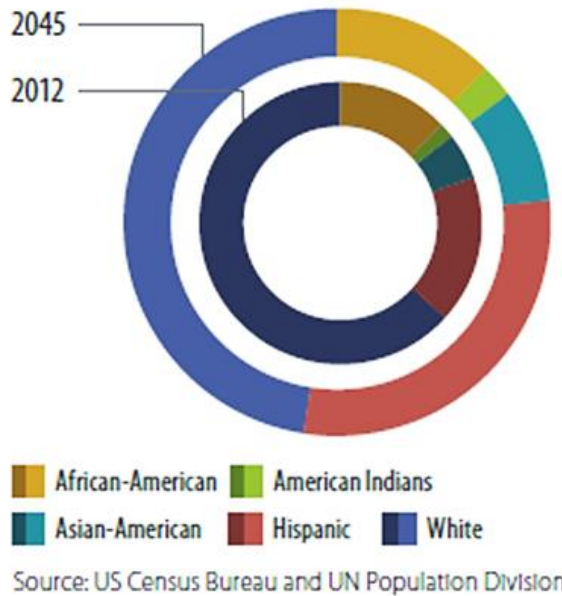
Figure 2.3 Future Demographic Changes in the U.S.

Thus, it's imperative that the Army develop TM strategies now to foster diversity and support a leadership pool that reflects the diversity of the Nation in the future. Officers serving as senior leaders in 2045 will enter service in 2020.

2.3.3 INDIVIDUALISM AND VALUE PLURALISM

In an increasingly globalized world, the power of one is significant. Individuals can access a multitude of cultural influences, which increases their exposure to a wide variety of life and career choices.[34] In turn, as individual expectations change and expand, organizations will need to treat every employee and every customer as individuals.

Failure to tailor careers and customer experiences will result in lost talent and customer loyalty. There will also be a demand for "unimaginable professions, careers and lifestyles,"[35] turning conventional career decision-making criteria such as pay, benefits, and promotion into baseline expectations. In lieu of basic compensation, employees will prioritize "soft" factors like

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[34] Ibid. p. 57.
[35] Ibid. p. 60.

fulfillment, social recognition, self-realization, personal development, self-expression, and the all-important work-life balance when choosing a job, a career, an employer, etc.[36]

Generation Y, or millennials, born between the 1980s and early 2000s, rank work-life balance high on their list of priorities, and as a result, major corporations in Germany (Adidas, BASF, Daimler, SAP, Siemens and ThyssenKrupp) are building kindergartens on site to support that balance. Furthermore, Generation Y employees, who are now in their twenties (and represent the bulk of the Army's junior leadership), do not expect to stay in the same job more than three years. As of now, there's no indication that Generation Z officers (starting West Point or ROTC in 2018 and becoming commissioned in 2022) will shift away from these expectations.

Leading Gen Y and Gen Z employees will pose a challenge for leaders of traditional, organizational hierarchies. Leaders will be required to generate commitment from their teams as individual loyalties shift away from the organization and toward professional and social networks.[37] In the emerging construct, loyalty will be judged by quality of relationships, not by length of service. Leaders will have to strike an appropriate balance when leading individuals who prefer autonomy and working in self-organizing teams.[38] How the Army, and the military, in general, adapts to the value changes in its workforce has yet to be addressed. The Army will need to take these priorities into consideration to manage officer talent successfully (Fig 2.4).

Millennials' Priorities
% saying … is one of the most important things in their lives

Being a good parent	52
Having a successful marriage	30
Helping others in need	21
Owning a home	20
Living a very religious life	15
Having a high-paying career	15
Having lots of free time	9
Becoming famous	1

Note: Based on adults ages 18-29.

PewResearchCenter
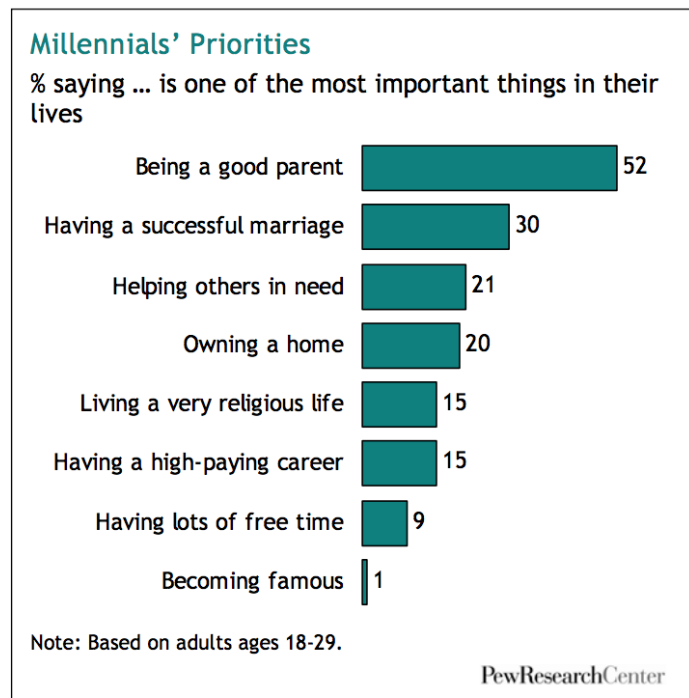
Figure 2.4 The Pew Research Center Report on Millennial Life Priorities[39]

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[36] Ibid. p. 67.
[37] Ibid. p. 73.
[38] Ibid. p. 74.
[39] http://www.pewresearch.org/topics/millennials/

Millennials work-life balance priorities will impact career decisions. When the study team interviewed junior officers, their comments reflected these sentiments. They remarked their career decisions were heavily influenced by family. One Captain shared he was making decisions that he knew would slow his promotion cycle.

Many corporations are responding to these priorities by long-term career planning. For example, PepsiCo has changed how it approaches career planning, by taking a long-term view that maps the broadening assignments required to develop leaders, cross-referencing with the personal requirements (child school requirements, spouse career milestones and potential elder care obligations) of the junior leaders with potential. PepsiCo refers to these in-depth reviews as "intelligent profiles."[40] The Army could likewise experiment with this informal career conversation, targeting its Captains.

2.3.4 DIGITIZATION

The digital era has blurred the lines between virtual worlds and the physical. In the current talent pool of recruits, 95% have a social media presence,[41] where they willingly share personal data that's always "on the record."[42] Not surprisingly, more than 75% of employers evaluate candidates based to some degree on their online presence.[43] For example, TalentBin and Jobvite offer recruiting services that scan the web finding candidates online.

In 2011, 89% of U.S. employers stated they had plans to use social networks to source job candidates. Going forward, the digital era will continue to see a merging of the public and private, which will turn a person's digital life into resume material. On its website, TalentBin claims, "nobody is out of reach."[44] As a major employer in the U.S., the Army can also leverage the digital realm to discover and to recruit talent.

However, the pervasive online presence of America's talent pool, coupled with the emerging cultural norm to share personal details, will require Army leaders to engage and to embrace the complex legal, moral, and practical issues of the virtual world. For example, as TRADOC's Mad Scientist observed, warfare could shift to a personal, targeted effort:

> Manipulating individuals' personal interests, lives, and familial ties; and subtle coercive/ subversive avenues of attack against the human brain will transform war into something far more personalized, scalable, and potentially more attractive to nation-states, non-state actors, and super-empowered individuals.[45]

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[40] Marion Devine and Michel Syrett, Managing Talent, p. 110.
[41] Ibid. p. 80.
[42] Ibid. p. 81.
[43] Ibid. p. 82.
[44] Ibid.
[45] Mad Scientist blog, http://madsciblog.tradoc.army.mil/5-personalized-warfare/

The Army may need to add additional screening tools to consider the vulnerability of its officer talent pool to these kinds of personal virtual and physical attacks.

While the digital realm provides tools to mine and assess talent, the Army will also need to be cognizant and responsive to the ways digitization is changing individuals in the talent pool. Research indicates technology has impacted the neural pathways of millennial brains. New and different neural pathways are being created due to the brain's neuroplasticity.[46] Heavy use of the Internet has been associated with, "changing the way the brains of digital natives work, engendering antisocial attitudes and a heightened tendency toward an inability to concentrate."[47] Furthermore, the Harvard Business Review noted that "young people may be under-stimulating and under-developing the neural pathways necessary for honing social skills."[48] If these early estimates pan out, the Army will need to review curricula, both in its own training and outside educational institutions, to address emerging gaps in requirements for Army officer accession. For example, when the Army finds itself in areas of the world where the population doesn't rely on technology for social interaction, it will be important for future officers to demonstrate the ability to forge personal alliances without technology.

The brain is an efficient organ. If new and different pathways are created, the Army should also be cognizant of what potential capabilities may be lost, how its training will bridge identified gaps, what the impact may be on how future officers develop strategy, etc.

2.3.5 NEXT TECHNOLOGIES

Emerging technologies are erasing the strict, academic lines between scientific disciplines and forcing the fusion of human knowledge to advance the tools we use. Parallel and merging advances in nanotechnology, biotechnology, information technology and cognitive science (NBIC), will transform the way we live and work,[49] as will advances in genetics, nanotechnology and robotics (GNR). As with all technological advances, there's potential for both good and harm to result. In 2003, the CIA noted that new biological agents "could be worse than any disease known to man." Future Army leaders will be faced with enhanced Soldier performance, enhanced enemy performance, and converging, largely unpredictable, technological applications.[50] The pace and degree of these changes will demand Army leaders who remain intellectually curious, who inspire their followers to be learners, and who recognize the interrelated complexity of the world they are engaging (Fig. 2.5).

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[46] Nicolas Carr, The Shallows: What the Internet is Doing to our Brain, p. 120.
[47] Op. Cit. Leadership 2030, p. 91.
[48] Ibid.
[49] Ibid. p. 117.
[50] Ibid. p. 137.

A Hedge Against Uncertainty

The cognitive demands on the Soldier grow more important as strategic uncertainty grows.

Thrives in uncertainty...

Existing Materiel Solutions

Cognitive Demands on the Soldier

Leadership & Education

Doctrine   Training

Agile
Adaptive
Innovative
Committed
Critical Thinker
Total Fitness
Empowered
Competent
Resilient

Empowered by Mission Command...

Strategic Uncertainty

Clear and Present Threats

North Korea   Iran   ISIL   Cyber threats

China   Russia   Criminal Networks   Homeland Security

Amorphous and Ambiguous Threats

The Army's Hedge Against Uncertainty: Cohesive teams of Army Professionals that **thrive** in conditions of uncertainty and chaos.

To prepare for an uncertain future, the Army must <u>optimize the performance of every Soldier</u> and leader through innovation and investment in education, training, and leader development.

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Figure 2.5 The Soldier as a Hedge Against Uncertainty[51]

Commercial businesses have had to respond to rapidly changing technologies, arguably at a pace that's exceeded demands placed on the Army. They've done so, in part, by leveraging talent strategies tailored to the needs of the business. The pace of change for a business and the level of ambiguity mandate different talent strategies (Fig. 2.5). If the pace of change is low and the level of ambiguity is low, then a business can invest in a long-term strategy to develop talent. Skills, knowledge and abilities required to successfully lead the business are predictable. The business can invest internally to develop talent that's able to execute a successful, time-tested business model. As the pace of change and level of ambiguity increase, businesses employ different talent strategies to respond to the marketplace. Businesses "buy" talent to shore up skill gaps when the pace of change accelerates, they "borrow" talent to respond to ever changing market conditions, and finally, businesses create a talent ecosystem to "broaden" the talent pool and increase options as marketplace shifts ebb and flow. The talent ecosystem encourages internal entrepreneurial spirit (staff to respond to business needs in an agile way without bureaucracy impeding progress), innovation, and developing alumni who are easily accessed when capability and capacity surges are required. The talent ecosystem is a

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[51] U.S. Army Combined Arms Center, *The Human Dimension Whitepaper: A Framework for Optimizing Human Performance*, 9 Oct 2014, p. 8.

more fluid business model; it thrives when the pace of change is low and the level of ambiguity in the marketplace is high.

HIGH

CHANGE

Buy
Hiring talent to fill skill gaps brought about by business planning based on change

Borrow
Using seconded or interim talent to foster organizational agility and respond to rapidly changing market conditions

Build
Long-term development of internally recruited talent to support business planning and maintain status quo

Broaden
Using "intrapreneurism," business incubation, and "alumni" relationships to create a talent ecosystem that explores options

LOW   HIGH

AMBIGUITY

Figure 2.6 Aligning Business and Talent Strategies[52]

The Army's predominant talent strategy, building from within, falls in the lower left-hand quadrant (Fig. 2.6). The Army is primarily a closed labor market, where officers enter at junior grades, and the Army trains them and builds its workforce. The Army doesn't recruit from the outside for middle and senior officers.[53] Because the system is hierarchical, where junior officers are trained by more senior officers, it works best in a stable environment with a predictable future. If the organization can determine the skill sets required, then there is an internal focus on building competency and sharing knowledge. Senior officers train junior officers on the skills and abilities needed to execute within a predictable future.

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[52] Op. Cit. Managing Talent, p. 166.

[53] Jun Wang, A Review of Operations Research Applications in Workforce Planning and Potential Modelling of Military Training, Land Operations Division Systems Sciences Laboratory, p. 14.

HIGH

Buy
Hiring talent to fill skill gaps brought about by business planning based on change

Army not hiring mid-level or senior-level officers

Borrow
Using seconded or interim talent to foster organizational agility and respond to rapidly changing market conditions

Consider expanding this strategy

CHANGE

Build
Long-term development of internally recruited talent to support business planning and maintain status quo

Army's traditional TM approach

Broaden
Using "intrapreneurism," business incubation, and "alumni" relationships to create a talent ecosystem that explores options

Consider leveraging talent network

LOW ← → HIGH

AMBIGUITY

Figure 2.7 The Army's Business-Talent Alignment[54]

Today's Army is facing a higher level of ambiguity. There are certain skill sets that remain at the core of what Army will require in the future, but there's a range of possible situations in which the Army will deploy. Scenario and contingency planning inform the Army of the talents that it may require in a range of potential futures. Thus, the Army has a talent ecosystem in place, leveraging the talent it has and informing the system of potential skill gaps to prepare the talent pipeline (Fig. 2.7). For example, data scientists will be critical to the Army's future success. Requirements for analyzing data in the institutional and operational Army will increase, and the demand for data scientists will soon outpace the talent pool. The Army will need to provide incentives to "grow" data scientists and implement strategies where it can "borrow" data scientists to bridge the gap between supply and demand.

The needs of the institutional and operational Army exceed the talent strategies outlined in the lower left-hand quadrant, which is one of the reasons senior officers spend significant amounts of time making the current talent system work. The underlying assumption of the current talent strategy is the future is predictable and the skills required are known. Given the future trends

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[54] Op. Cit. Managing Talent, p. 166.

outlined above, the Army needs to position itself to employ multiple talent strategies to keep pace with rapid change.

Economist writers Marion Devine and Michel Syrett offered the following guidelines for implementing different talent strategies:

- If there is a clear future and rapid change (high pace of change and low level of ambiguity) then it's important to emphasize learning and have clear development plans in place to upgrade skills and to bridge critical skill shortages.

- If the future is difficult to predict (high pace of change and high level of ambiguity) then there is a high priority on reading the "market signals" and responding rapidly with agility by borrowing talent.

- When the future has a range of possibilities (low pace of change and high level of ambiguity) it is important to focus on contingency and scenario planning. The organization needs to make exploring options in the external environment a priority and to invest in building a talent ecosystem.[55]

The Army's mission is ambiguous and the Nation's ability to predict where and what the Army will be doing is not certain. Thus, fostering a culture that encourages officers' curiosity and designing teams to accelerate learning will be operational multipliers in the future.

2.4. CASE STUDY: CYBER OPERATIONS PERSONNEL

The study team believes the TM issues involved with the creation of Cyber Command presents a valuable case study that Identifies and informs the types of TM issues the Army will face in the future. The TM challenges faced by Cyber Command are a harbinger of challenges to come for other branches. For example, officers who serve in fields that provide the appropriate skill sets and levels of competence needed in commercial industry will become exceedingly attractive to industry, and targets for commercial talent acquisition. That dynamic is already playing out in the competition for information technology professionals needed in Cyber Command, where talents that serve as the forerunners to other skill sets in demand (both in the public and the private sector, e.g., data science and unmanned systems) are sought by many organizations outside the military.

US Army Cyber Command was established in October 2010, and the Army created a Branch to develop the cyber skill set using incentive programs to attract and to retain cyber warriors. During the start-up process, LTG Edward C. Cardon, Commanding General of U.S. Army Cyber Command (ARCYBER), reported that while recruiting officers wasn't a problem, it was difficult to predict what retention issues the Command may face, given the high demand in the private sector for this skill set. As reported in Army Magazine, "big-name corporations with deep

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[55] Ibid.

pockets are luring away highly skilled troops with tech backgrounds, and the Army wants these troops to stay."[56]

When ARCYBER realized the cyber skill set was in high demand both within the military and in the private sector, its personnel recognized there was a need for a new TM approach. Cyber skills required significant training and education to provide the technical depth required in a field with exponentially increasing advances in technology. Moreover, the Cyber Mission Force was being "stood up" within the culture of a drawdown.[57]

In response, ARCYBER staff outlined the following tenets for its TM program:

- Flexibility in career timelines (Fig. 2.8)

- A "build-assess-build" approach

- Career path/plan providing opportunities for advancement and development (Fig. 2.9)

- Individual Career Management for Officers[58]
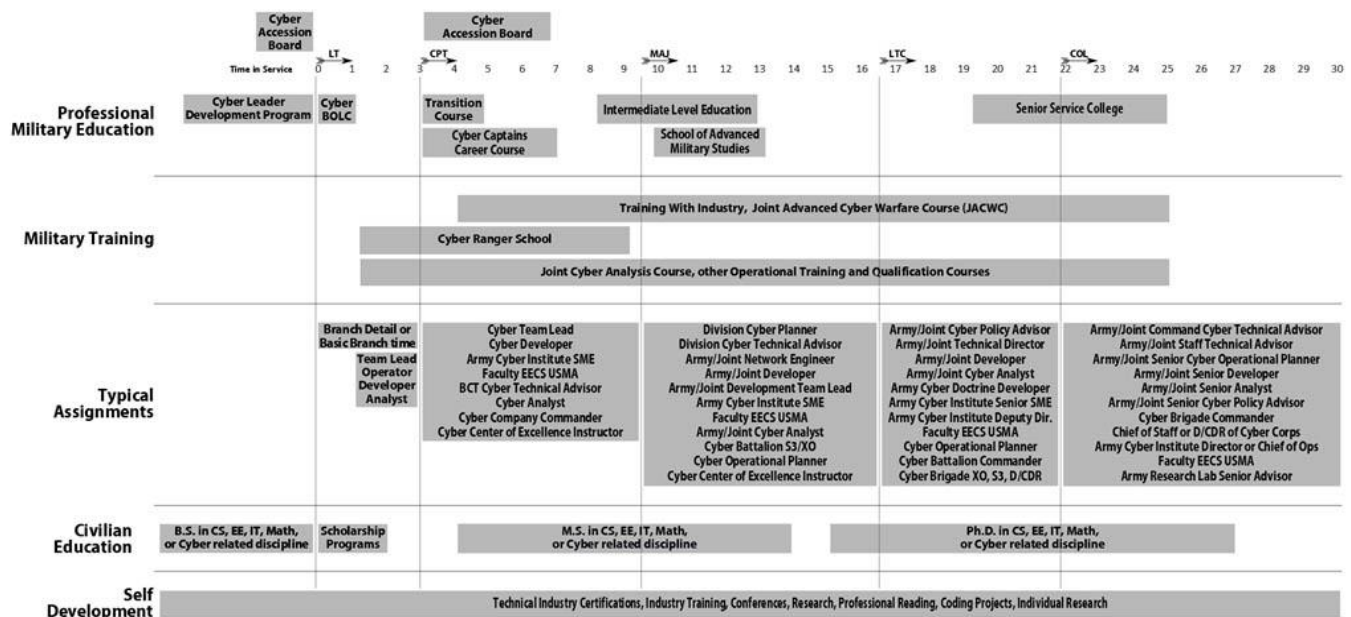
Figure 2.8 ARCYBER Nominal Career Timelines

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[56] Ferdinand H. Thomas II, Retaining Soldiers on a New Battlefield: An Army Plugged into Cyber Needs Talented Specialists, ARMY Magazine, Volume 65, No. 9, Sep 2015, p. 45.
[57] COL Andy Hall (HQDA G1), Briefing: Talent Management and Cyber, 4 Feb 2015.
[58] Ibid.

17A (Officer) Talent Management (FACER)

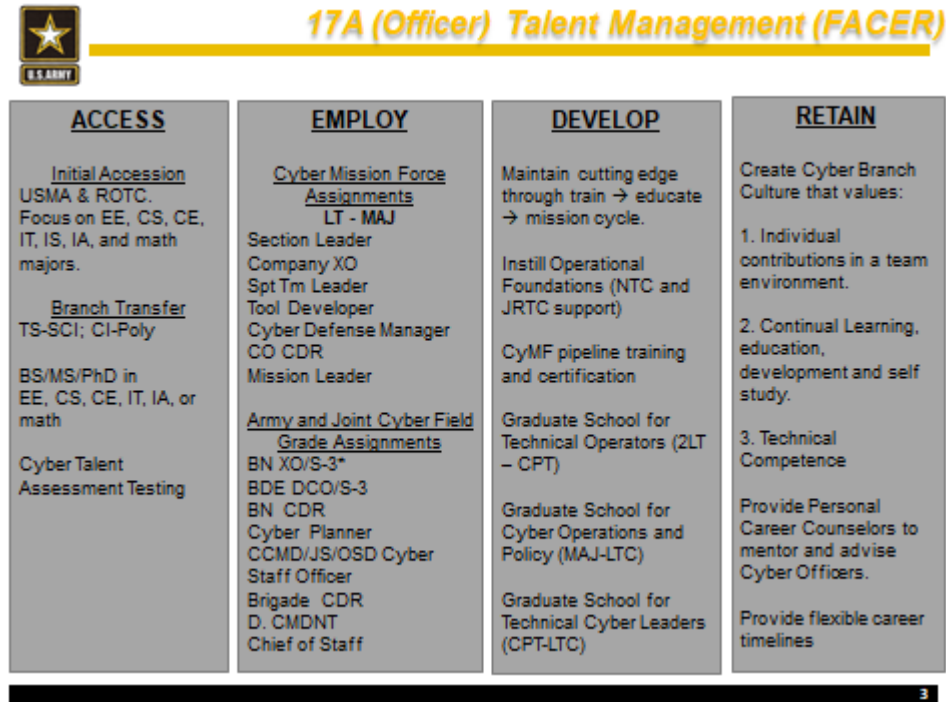| ACCESS	EMPLOY	DEVELOP	RETAIN
Initial Accession USMA & ROTC. Focus on EE, CS, CE, IT, IS, IA, and math majors.	Cyber Mission Force Assignments LT - MAJ Section Leader Company XO Spt Tm Leader Tool Developer Cyber Defense Manager CO CDR Mission Leader	Maintain cutting edge through train → educate → mission cycle. Instill Operational Foundations (NTC and JRTC support)	Create Cyber Branch Culture that values: 1. Individual contributions in a team environment.
Branch Transfer TS-SCI; CI-Poly BS/MS/PhD in EE, CS, CE, IT, IA, or math		CyMF pipeline training and certification	2. Continual Learning, education, development and self study.
	Army and Joint Cyber Field Grade Assignments BN XO/S-3* BDE DCO/S-3 BN CDR	Graduate School for Technical Operators (2LT – CPT)	3. Technical Competence
Cyber Talent Assessment Testing	Cyber Planner CCMD/JS/OSD Cyber Staff Officer Brigade CDR D. CMDNT Chief of Staff	Graduate School for Cyber Operations and Policy (MAJ-LTC) Graduate School for Technical Cyber Leaders (CPT-LTC)	Provide Personal Career Counselors to mentor and advise Cyber Officers. Provide flexible career timelines

Figure 2.9 Cyber Officer Career Template

Incentives offered to cyber officers by the Army to boost retention included incentive pay, special duty assignment pay, and bonuses. However, money wasn't the most effective or important incentive. There were multiple factors that contributed to retention, including the following incentives:

- Promotions

- Educational opportunities

- Transition to Warrant Officer or Department of Army Civilian

- Challenging assignments

- Certifications

- Conference Attendance

Other factors that influenced retention included recognizing the impact of command climate, mission, recognition, work culture, and responsibility, and establishing a deliberate program to retain transitioning Soldiers as talented civilians[60]

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[59] Ibid. slide 3.
[60] Ibid. slide 12.

The value of a deliberate TM program became apparent when addressing the gap in Army cyber skills. At the inception of Cyber Command, it was noted as "a unique opportunity to pilot TM initiatives and evaluate Army-wide use."[61] Importantly, ARCYBER documented lessons learned and continues to learn about retaining talented individuals in a high demand field.

Two ideas that emerged from this exercise are worth highlighting:

1. Flexibility in career timelines and the transition from Soldier to civilian – these initiatives have wide application within the Army and will inform future personnel decisions. Transitioning Soldiers to civilian employees allows the Army to create a "talent ecosystem" discussed previously.

2. Accessing talent in unconventional places – the U.S. National Commission on Military, National, and Public Service is seeking feedback from the public to allow older hackers into the armed forces.[62] It's not clear whether or how the Army could support that effort.

2.5 INTEGRATE TM TO MEET ARMY'S 2030 OFFICER REQUIREMENTS

From the study team's baseline, it's apparent that implementing a robust TM program may be problematic for a very large personnel system such as the Army's. For several decades now, the Army and its sister Services have used industrial-modeled, increasingly automated, highly bureaucratic systems to manage their personnel. While that system served the Army well during its expansion over the last century, developments such as the clean slate, ad hoc TM activities, and increasing use of the BNRs are all signs that the system is no longer meeting the requirements and expectations of its users. The improvisations and "work-arounds" have become necessary functions. So, while it may be argued that the Army's formal, personnel management system doesn't manage talent per se, there are several command-sanctioned, extracurricular efforts being made to identify, groom, and promote talent within the ranks.

As the Army reduces its end strength and continues to operate in environments where the human dimension is so critical to operational and strategic success, it needs to adopt and formalize mechanisms to identify the talent it has among its ranks. Once established, the Army's TM program can evolve to focus on building effective teams and exploring how to design teams that accelerate learning and increase productivity.

To help inform the development of the Army's TM program, the study team identified several guiding principles, based upon the assumption (observed in several organizations successfully managing talent) that "talent planning should be strategic and integrated and much less tactical

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[61] Ibid. slide 13.
[62] https://www.federalregister.gov/documents/2018/02/16/2018-03261/request-for-information-on-improving-the-military-selective-service-process-and-increasing

and piecemeal."[63] As acknowledged above, there are differences between industry and the Army, but the Army is competing for eligible young people with the private sector, so some of industry's best practices could be adapted within an Army framework to improve the Army's competitiveness. Where relevant, the study team adapted the principle to transfer a best practice that will work within an Army framework.

1. **Be synergistic.** Critical elements of the Army's TM program will include assessing, employing, developing and retaining talent. If one element isn't working well, the risk increases of not acquiring, promoting, or keeping the right talent. Each element reinforces the others. Likewise, TM is a collective endeavor, with the responsibility to engage and manage talent resting jointly among its stakeholders—the institution, its leaders, and individuals. The stakeholders' roles include:

   - Institution—create "fertile ground" for the individual and teams to optimize ("be all that you can be") across all branches (i.e., flexible to be used in different ways across the Army) while ensuring a fair process with recourse for adjudicating conflict. Allow innovations to address requirements for narrow, specific talents. Ensure leaders and individuals are clear in their roles and responsibilities to discover, develop, and employ talent; when individuals join the Army or become leaders, roles and responsibilities need to be explicit. In short, build a culture that attracts and develops talent.

   - Leaders—critical to the acquisition, development and retention of talent, and most importantly, the assessment of junior officers. Leaders should rely on multiple assessments to discover talent and multiple reviews to assess and promote talent. Leaders also act as the exemplars; star players want to be coached by talented individuals and they want to be part of a winning team. Feedback from leaders is an imperative.

   - Individual—responsible for managing his/her career. There are more constraints in the Army compared to commercial industry, but officers relay the importance of engaging with assignments officers and commanding officers in navigating a career. Playing a passive role doesn't help the individual, the team, or the institution.

2. **Enable agility.** The Army's TM program will be uniquely challenged to predict and cultivate talent required to win the next war, respond to the next humanitarian crisis, support allies and developing nations, etc. The future, and past attempts at predicting the future, were aptly described by former Secretary of Defense Robert Gates in a speech to West Point Cadets:

"When it comes to predicting the nature and location of our next military engagements, since Vietnam, our record has been perfect. We have never once gotten it right."

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[63] Op. cit. Managing Talent p. 168.

We can't know with absolute certainty what the future of warfare will hold, but we do know it will be exceedingly complex, unpredictable, and – as they say in the staff colleges – "unstructured." Just think about the range of security challenges we face right now beyond Iraq and Afghanistan: terrorism and terrorists in search of weapons of mass destruction, Iran, North Korea, military modernization programs in Russia and China, failed and failing states, revolution in the Middle East, cyber, piracy, proliferation, natural and man-made disasters, and more. And I must tell you, when it comes to predicting the nature and location of our next military engagements, since Vietnam, our record has been perfect. We have never once gotten it right, from the Mayaguez to Grenada, Panama, Somalia, the Balkans, Haiti, Kuwait, Iraq, and more–we had no idea a year before any of these missions that we would be so engaged.[64]

Predictions aren't always reliable, so it's imperative that the Army's TM system recognizes, develops and records a wide array of human talent that can be deployed in multiple missions on multiple fronts. Army TM needs to prepare for events that senior leaders may not imagine by offering a diverse portfolio of skills oriented for the future. And when leaders forge ahead of the system's status quo, it must be responsive and easily updatable to meet new and emerging requirements.

3. **Use science.** No TM system is, was, or will be perfect. In its first iterations, the Army's program will need to discover, record, and develop the talents of over 80,000 officers. To scale best practices in TM, the Army will need to develop and use technology that mitigates the inherent challenges accompanying any large bureaucracy that attempts to address individual needs. Specifically, the Army can use technology to make the TM program scalable, working at an enterprise level but responsive to smaller scale, ad hoc projects. Technology should also be used to simplify processes for stakeholders as well as to promote transparency and accountability in every part of the process. Beyond technology, the Army will have to monitor the latest scientific research on talent management to ensure it applies the appropriate processes at the enterprise level.

Following these principles, the Army will ensure its TM program reinforces the values and purpose of the organization, regardless of where it finds best practices to adopt.

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[64] Robert Gates (Secretary of Defense), 25 February 2011, https://www.youtube.com/watch?v=AjPeTKSlMQY

3. TM BEST PRACTICES: INTEGRATED TM

In a survey of over 600 companies, there were three elements that consistently contributed to their ability to grow talent:[65]

1. CEOs and Boards of Directors provided leadership, inspiration and personal involvement in the selection, review and development of talent.

2. High potential candidates at the top 20 companies were clearly distinguished, receiving exposure to senior leadership and differentiated compensation and development.

3. The right TM programs, i.e., fully integrated and properly executed.

The survey also tracked earnings and found those companies with top TM programs outperformed their industry by 18.7% and slightly outperformed the S&P 500 by 1.7%. The survey results support the idea that investing in TM sustains a company's competitiveness over the long term.

While the Army doesn't need to beat its competitors in earnings, it does have to compete for talent. Businesses spend billions on managing talent because in today's knowledge economy, attracting and retaining the appropriate people gives a business competitive advantage. The same is true with the military in general. The Army will need to recognize, as corporations have, that there's a global war for talent.[66]

Key to this recognition will be the Army's ability to approach TM from a strategic perspective. For example, the Army will need to deliberately target skills and aptitudes required in the ranks to accomplish specialized missions. Lacking strategic vision, any TM program will devolve to a process-oriented face-to-space filler. "Talent-building processes become insulated from the external competitive environment because too much effort is spent on the operational 'how' and not enough on the strategic 'why'."[67]

An integrated TM system avoids insulating the transactional, tactical pieces of managing human capital from the strategic plan of an organization. The study team believes integration is critical and requires all the elements of the TM program to be consolidated under one senior leader.

Six elements comprise an integrated TM system (Fig. 3.0). In many organizations, these elements are in different parts of the organization. Businesses have found that integrating the elements helps to produce a talent cycle, which provides better alignment with the core mission of the organization.

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[65] Marc Effron , The Top Companies for Leaders 10 Years Later, The Talent Strategy Group, p. 2.
[66] Elizabeth G. Chambers, et. al, The War for Talent, The McKinsey Quarterly: The Online Journal of McKinsey & Co., 1998, Number 3.
[67] Op. cit. Managing Talent p. 166.

Best Practices: Cultivating Individual and Team Talent

GE, Microsoft, Google, P & G, Intel and Universities view talent as a "strategic asset" – valuable, differentiating and difficult to imitate. Focus on accelerating the learning cycle and competing for the future.
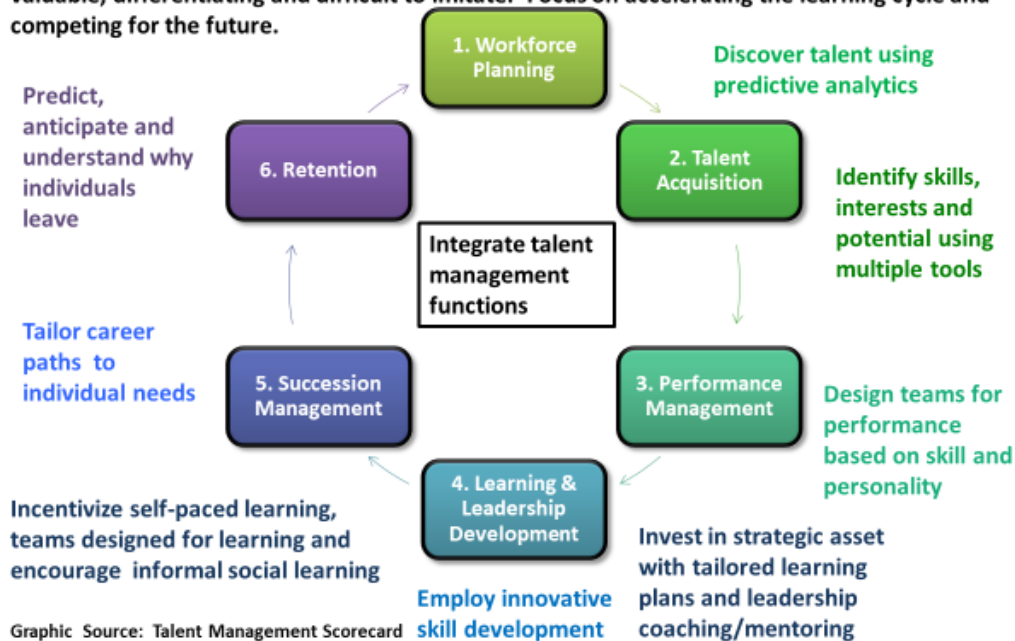
Figure 3.0 Integrated TM Enterprise (ITME)

3.1 WORKFORCE PLANNING

Workforce planning is projecting what skills and abilities the organization will need in the future. The U.S. Government Office of Personnel Management defines workforce planning as "the systematic process for identifying and addressing the gaps between the workforce of today and the human capital needs of tomorrow."[68]

In the Army, workforce planning is impacted by three factors (Fig 3.1):

1. Institutional mechanics. Workforce planning in terms of required skills doesn't go beyond the five-year Program Objective Memorandum (POM) cycle. There are models that project farther, but those focus on the impact of proposed policies (e.g., change in retirement benefits). The Army is a closed labor market where planners are required to project senior leader requirements twenty and thirty years in the future. Thus, an underlying assumption for Army workforce planning is 'if we have right number of officers, we have the right talent.'

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[68] Office of Personnel Management, https://www.opm.gov/policy-data-oversight/human-capital-management/reference-materials/strategic-alignment/workforceplanning.pdf

2. Predicting future skill sets. Global demand for advanced skills will increase, with cyber security skills and data science skills in high demand in both the Army and the private sector. Since the Army recruits and builds talent for a twenty plus year career it is a challenge to project what skills will be needed (capability) and how many officers are required with that skill set (capacity) in a rapidly changing and uncertain future.

3. Demographics. The Pew Center research reports the U.S. population will be 438 million by 2050. New immigrants will account for 82% of the growth. Once the Army projects capability and capacity needs for the future, it will also need to understand the future context for attracting the appropriate talent to execute the mission.

Army Personnel Management does not equal Army Talent Management
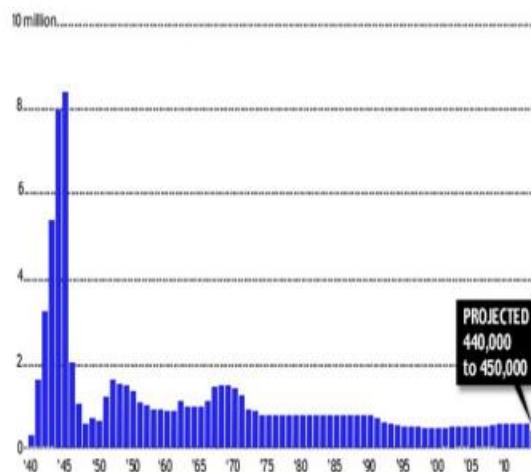
Active-duty U.S. Army personnel (1940-2014)

- Army workforce projections are based on numbers not skills or capabilities

- Commanders need a more comprehensive view of their Officers' talents

- **Army needs to know the potential of the force** – untapped talent resides within the force

PROJECTED 440,000 to 450,000

Figure 3.1 Army's Current Workforce Planning

For an example of a best practice, in a workforce planning exercise, 3M discovered that its talent strategy was not aligned with its business plan. The company needed to reexamine its talent strategies because, if demographic trends prevailed, the aging workforce in the U.S. and Europe would create serious gaps in required skills among its 19,000 employees operating in 30 countries. It would have difficulty recruiting talent and in succession management, since most of its leaders were aging and scheduled to retire, leaving a gap in the promotion pool as well. In response, 3M expanded its definition of talent to include technical and leadership skills, enlisted its senior leaders in multiple regions to fill skill gaps, and saw the mobility of internal talent.[69]

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[69] Op. cit. Managing Talent, p. 54.

Workforce planning includes a talent review. It looks at the talent needs of the future and makes decisions based on operational need and all the sources of data available to provide context (both internally and externally.)[70]

3.2 TALENT ACQUISITION

An organization has several options when acquiring talent. It can build talent within the organization, buy talent from the outside the organization, or borrow talent on a temporary basis. A fourth option, rarely used, involves building a "talent ecosystem" by exploring the internal and external environment for talent to build a network that might have been otherwise overlooked.

The Army, like many big organizations, builds its own talent pool, but the talent needs to be in the right place at the right time. Some challenges to realizing that synergy include:

1. Right talent at the wrong time. Soldiers may have skill sets the Army will need in the future, but it's not utilizing those skill sets now. It's costly to replace that talent when demand for the skill set returns, so the Army can reduce its acquisition demand by retaining and motivating Soldiers with out-of-cycle skill sets.

2. People in place don't have the right skill set. There are multiple reasons for this mismatch: (1) organizational strategy may be misaligned with the human resource strategy; (2) the internal learning and development curriculum isn't keeping pace with skills required for current mission sets; and (3) there may be a problem with the appraisal and promotion system. As a result, the available talent pool is mismatched to the skill sets required to execute the tasks.

3. People with the right skill sets aren't available. In the Army, this can happen due to deployment, promotion track requirements (e.g., professional military education, another assignment, etc.), or it may be a simple case of not having enough Soldiers with that skill set to meet the mission requirements.[71]

The Army relies on a robust pipeline of junior officers to fill its upper ranks. In effect, the junior officer pool is the talent pool. As it builds its talent, it will be important for the Army to guard against fragmented processes forming an obstacle to its overall objective—acquiring future leaders of the Army. For example, the study team noted an area for improvement in how the current system favors tactical aptitude in junior officers and tends to overlook those showing potential for strategic thinking. By no means is that a new phenomenon, and there's clearly a

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[70] Ibid. p. 30.
[71] Ibid. pp. 30-31.

need in the Army for officers with tactical acumen. But the Army also needs senior officers who can think strategically. The differing career paths of Generals Eisenhower and Patton are often used to illustrate the point. Early in his career, Eisenhower was identified as an officer with strategic potential, despite some senior officer attempts to block his promotion. His mentor, then Brigadier General Fox Conner, arranged for Eisenhower to attend Command and General Staff College by first sending him to Ft. Logan, Colorado as a recruiter.

> Eisenhower was not immediately sent back to Leavenworth. Instead, he was sent back to Fort Meade. Conner wired him, urging patience: "No matter what orders you receive from the War Department, make no protest. Accept them without question." Eisenhower trusted in Conner but was confused by his note, particularly when the War Department assigned him as a recruiting officer at Fort Logan, Colorado. Once again, in spite of Conner's telegram, Eisenhower believed he was being ignored, and once again he was wrong. Not only had Conner taught Eisenhower the principles of strategy; now he was giving his protégé a long-distance education in just how the Army worked. Conner patiently explained the reason for the Fort Logan transfer in a letter Eisenhower received just after his arrival in Colorado: as a recruiting officer, Conner wrote, Eisenhower would be assigned to the Office of the Adjutant General, where two slots had just opened up for attendance at Leavenworth. Several days after Conner's letter, another arrived from the War Department, ordering Eisenhower to the Command and General Staff School.[72]

When considering who to select to lead Operation Torch, the invasion of French North Africa in 1942, President Roosevelt and Army Chief of Staff General George Marshall had both Patton and Eisenhower to choose from among the pool of candidates. If they'd used the metrics and framework observed in use by the study team in today's Army, Eisenhower, the officer they chose to command, wouldn't be considered (Fig. 3.2). Eisenhower was skilled at strategy and persuading/influencing disparate coalition partners to align and to achieve a common goal. Patton's brilliance was operational battle command. Both skills are critical to the Army, but it's imperative for the Institution to know where to deploy which talents to achieve success. Despite his not fitting the typical mold and having a normal career path, a senior leader recognized Eisenhower's strategic potential and mentored him over many years. In a closed talent acquisition system, the Army relies on its senior leaders to recognize potential and foster officer growth.

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[72] Mark Perry, Partners in Command: George Marshall and Dwight Eisenhower in War and Peace, NY: Penguin, 2007; p. 47.

	Patton	Eisenhower
Command Experience	Yes	No
Command & General Staff School	Yes	Yes
Battalion Command	Yes	Yes
Army War College	Yes	Yes
Brigade Command	Yes	No
Division Command	Yes	No
Corps Command	Yes	No

Figure 3.2 Comparing Eisenhower and Patton[73]

An integrated approach to TM decreases the risk of losing junior officers who can make valuable contributions to the Army. Lacking an integrated approach, fragmentation of the program can lead to "individuals getting lost in the system or being held back by a boss who may not want to lose them or who feels sufficiently threatened by them to block their progress."[74] It's worth noting that Eisenhower felt lost in the system, even when he had someone helping him navigate.

In terms of best practices, Proctor and Gamble (P&G), a $65B company with 105,000 employees, employs the same talent acquisition as the Army—a build strategy. It promises promotions from within and long-term careers. In one year, P&G attracted 600,000 applicants worldwide and selected 2,700 applicants to join the company. Like the Army, P&G's success depends on the strength of its talent pool, which is built internally, and managed "with a disciplined process led by the CEO and the senior leadership team."[75]

As a global company, P&G has built a supply chain management process for global talent that's executed locally and coordinated globally.[76] A technology-based TM system tracks employees and positions. The tracking system primarily monitors the career progression of 13,000 middle and upper managers[77] by tracking career moves and recording capabilities, education, community affiliations and career histories. The entire talent pool of middle and upper managers is visible to senior leaders.[78]

In other companies, hiring is often conducted using an inefficient, manual screening process. It's difficult for screeners to manage and track all the relevant variables that guide hiring

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[73] Michael Shekleton, Developing Strategic Leaders: An Option, 6 Dec 2016. https://thestrategybridge.org/the-bridge/2016/12/6/developing-strategic-leaders-an-option
[74] Op. cit. Managing Talent, p. 36.
[75] Ibid. p. 71.
[76] Ibid.
[77] Ibid. p. 72.
[78] Ibid.

decisions, and it's impossible for screeners to engage all candidates meaningfully. As a result, unsubstantiated assumptions about future performance are often used to select final hires.

 Several tools are currently offered to overcome the inadequacies of manual or analog talent acquisition. Automation, digitization and self-service provide key advantages to talent acquisition tools. For example, rather than relying on screeners to pare down applications to a manageable pool, applicants can be driven to a portal through which an initial evaluation can begin. Applicant performance on key indicators can also be reviewed through engagement with the portal and compared against the performance of high value employees within an organization. In the absence of an internal baseline to use for comparisons, candidates can be evaluated on key dimensions that are correlated with high potential. These can include mental agility, communication, appetite for change, ability to deliver results, and awareness.[79]

Automated tools have the advantage of providing evidence-based recommendations to hiring managers. One company relied on the conventional wisdom that strong academic performers from well-known academic institutions would make the best sales people. However, based on an analysis of top performing sales persons within their organization, the company identified several attributes which correlated with success, such as prior experience in sales, evidence in the resume of overcoming obstacles, etc. The salesperson's alma mater didn't correlate with success. Taking this data, the company implemented changes to its acquisition process.[80]

Beyond the advantages of data driven talent acquisition, the study team also identified a best practice when human resources professionals had access to operational leaders and/or the senior management team. In one survey, seventy-two firms ranked the human resource function low on operating at the strategic level, but effective at transactional functions.[81] Reinforcing the importance of an integrated TM enterprise, successful businesses ensure there's strategic alignment between organizational needs and talent acquisition.

3.3 PERFORMANCE MANAGEMENT

A critical component of managing talent is providing timely feedback to personnel on their current performance and being clear on what skills need to be honed to obtain promotion, recognition, etc. Like the Army, most organizations assess an individual's performance based on his/her ability to deliver results and his/her demonstration of potential to assume leadership roles in the future.[82] Regarding the latter assessment, many organizations aren't transparent when outlining what they recognize as potential, which can lead to problems for those employees who want to advance to leadership roles. For its part, the Army does have career path guides, which indicate the jobs to complete and the schools to attend for an officer to advance in rank.

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[79] Tools that address talent acquisition are available from HireVue and Korn/Ferry, among others.
[80] http://www.forbes.com/sites/joshbersin/2013/02/17/bigdata-in-human-resources-talent-analytics-comes-of-age/
[81] Op. cit. Managing Talent, p. 28.
[82] Ibid. p. 143.

The study team found Google provides a more transparent process. Google is well known for its analytical work, and its TM program reflects the idea that "Google measures everything."[83] The company measured leadership against criteria that were determined based on performance data, data from attitude survey data, in-depth interviews and upward feedback survey data. Google staff also interviewed leaders with great resumes, leaders with terrible resumes, and people who directly reported to both. The combination of quantitative and qualitative data led to Google developing five leadership criteria by which they measure their managers and help the company identify potential leaders: (1) lead people with vision; (2) collaborate across function; (3) make timely decisions thru periods of ambiguity; (4) develop teams to succeed; and (5) deliver results in times of change.

Whirlpool Corporation used a similar approach to identify good fits in its leadership ranks. In business for over 100 years, Whirlpool enjoyed easy access to talented individuals capable of filling leadership posts until conditions shifted and limited that access. Four factors contributed to the shift, which Whirlpool described as the "perfect talent storm:" [84] (1) complexity of the business increased; (2) its customer base demanded innovation in products; (3) the competition for talent increased globally; and (4) attitudes toward work changed (employees were more comfortable changing companies to find more opportunity).[85]

In response, Whirlpool looked at its most successful leaders and determined there were four top talent indicators: (1) thought leadership; (2) extraordinary results; (3) driver of change; and (4) attracting, engaging and developing talent. Leaders who possessed these characteristics were successful at Whirlpool, but perhaps more importantly, the company discovered there were also talent derailers. These managers either lacked or had excessive confidence, lacked character and values, and had poor management skills.[86] Once the company developed this framework, it created an assessment bias card that reminded leaders who were assessing talent that different forms of bias can stand in the way of accurately assessing leaders and their potential contribution to the organization.[87]

At times, the TM system, or lack thereof, can act as the talent derailer. For example, the Avon Company, with a 122-year history, $10B in revenue, and 42,000 employees, realized it was experiencing talent challenges. Specifically:

- Employees reported little understanding of performance management measures

- The company's egalitarian culture was stultifying; lower performing employees weren't managed to improve, and higher performers weren't targeted to lead

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[83] Ibid. p. 14.
[84] Best Practices in Talent Management, p. 260.
[85] Ibid. p. 259.
[86] Ibid. p. 263.
[87] Ibid. p. 264.

- Talent reviews and developmental conversations, if performed, were sporadic

- Decisions on promotions and broadening opportunities were based on emotion and personal knowledge of individuals rather than objective facts

Two underlying principles drove Avon's TM transformation: "execute on the what" and "differentiate on the how."[88] The "what" referred to performance management and succession management needed to be consistent and flawless. The "how" included coaching that focused on changing leader behavior. The company simplified its performance management process by focusing on three questions:

1. What is the fundamental business benefit that this talent process is trying to achieve?

2. What is the simplest possible way to achieve this benefit?

3. Can we add value to the process that would make it easier for managers to make smarter people decisions?[89]

Beyond individual performance, the study team observed best practices in assessing team performance, specifically, in the measure of team productivity–predicting where and when team performance and innovation will begin to slack off. Here again, the collection and analysis of data allows organizations to improve decision making.

For example, NASA has applied simulation and sensing to better understand the interplay between team and task effectiveness.[90] Like the Army, NASA's mission success is impacted by team execution, where mission critical tasks can be undermined by ineffective teamwork. To better understand this dynamic, NASA developed a computer-based simulation to study team interaction and decision making. During the simulation, a camera monitored each team member's affective response to the stressors introduced by the researchers. Preliminary results emphasize the value of collaboration: effective collaboration can overcome the negative impacts of stressors. More importantly, trust among team members had a very strong influence on success. Just as important to team performance, the results also indicated physiological reaction to stress can be detected. This will allow individuals or team leaders to introduce measures to counter the effects of stress.

3.4 LEARNING AND LEADERSHIP DEVELOPMENT

Scientists are researching ways humans can accelerate learning. One method involves a neural translator called myelin, an insulator that wraps around the nerve fibers that carry an electrical pulse. All human skills, including Army-specific skills such as driving a tank, shooting a rifle or

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[88] Ibid. p. 4.
[89] Ibid. p. 7.
[90] http://www.mccormick.northwestern.edu/industrial/news/articles/2016/contractor-crews-nasa.html

manipulating a field radio, rely on a chain of electrical pulses in the brain. Myelin protects the signals traveling through the brain like rubber insulation around a copper wire, ensuring the signal is strong and the impulses don't escape. Dr. George Bartzokis, a researcher in the field from UCLA explains, "all skills, all language, all music, all movements, are made of living circuits, and all circuits grow according to certain rules."[91]

Research that allows us to manipulate those rules could lead to the development of environments that accelerate learning. For example, by facilitating focused practice, a Soldier may be trained to acquire a month's worth of skill in minutes. Tapping into this neurological mechanism requires three pillars:

1. Ignition. How an individual perceives him or herself is predictive of success. Research indicates that a person's perception has more to do with progress than aptitude or trait. For example, an Australian music psychologist conducted a study on music students to gauge their commitment to learning an instrument. A group of students who perceived themselves as musicians outperformed a self-identified, shorter-term group by 400 percent.[92] This occurred even though the long-term group only practiced twenty minutes per week, while the short-term group practiced 90 minutes per week. The long-term group with less practice outperformed the short-term group because members of the short-term group were just going through the motions.

   > It's all about their perception of self. At some point very early on they had a crystallizing experience that brings the idea to the fore, that says I am a musician. That idea is like a snowball running downhill.[93]

   The students had a vision of themselves and what they could accomplish, which accelerated their progress and energized them to learn.

2. Deep practice. Once ignited, an individual makes a commitment to a focused method of practice, and he or she will build a skill and accelerate learning. As noted above, spending more time practicing doesn't mean one acquires a skill. Focused practice enables the acquisition of skill.

3. Master coaching. The master coach combines ignition (supplying energy for growth) with deep practice (growing the skill). Master coaches share certain techniques: (1) they tailor their responses to individuals; (2) they provide timely feedback focusing on the fundamentals; and (3) they gauge a what person is capable of learning and take them to deeper levels.

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[91] Daniel Coyle, Talent Code, p. 6.
[92] The group of students identifying as musicians answered the question 'how long you think you will play your instrument?' with 'through high school' or 'all my life.' The shorter-term group answered 'I will play this instrument through the year.'
[93] Op. cit. Talent Code p. 104.

The Army has the framework to leverage this approach to developing skills. As it employs the 'build' model of TM, coaching, mentoring, and counseling will continue to be crucial to maintaining a robust talent pipeline. However, for the last seven years, the Combined Arms Center (CAC) Annual Survey of Army Leadership (CASAL) has placed "develops others" at the bottom range of responses. Less than two-thirds of respondents state their immediate supervisor remained approachable to ask questions. Fifty-six percent stated the direct supervisor involved them in a planning process or decision-making process. Fifty-three percent noted their leader shared advice, experiences and lessons learned.[94] The results indicate a good portion of the talent pipeline isn't recognizing when they're being coached, mentored and/or developed. Interviews conducted with junior and senior officers validated the results of CASAL surveys; counseling sessions, mentoring opportunities and development opportunities were lacking.[95]

A note on mentoring: Learning and leadership development will continue to lie at the core of the Army's TM strategy, and one area that needs immediate attention is mentoring. There's no substitute in TM for effective mentoring. It happens in the Army, but like other aspects of the personnel system, mentoring is ad hoc and episodic. Officers need to be held accountable for mentoring, and if somehow there's a short-fall of capable mentors, the Army needs to consider reviving a senior mentor retired officer program to address the issue. Many corporations run successful mentor programs, both face-to-face and virtually, to develop their leaders. Other Armies also use mentors from outside the system to coach their leaders. Investing in the development of leaders reaps long-term benefits and mentoring can play a critical role in that development.   In addition, Senior leaders need to create a culture, a command climate, where mentoring and learning is encouraged. Since we cannot predict the future, it's important for officers to continue learning and to engage in learning beyond the classes offered in their formal training and education. This type of mentoring/learning is particularly important during periods of rapid change, like now, because the system may not respond as quickly to a shift, but motivated officers can and will pursue learning on their own.

Improving the practice of developing talent aids retention, and focusing that development on promotion milestones and succession makes the talent pipeline more robust. Implementing these types of improvements wouldn't require the Army to make any additional investment, but it would require senior leaders to adopt and promote a change in culture. The study team believes this is a good investment to make. The long-term impact of neglecting leaders' roles in developing the next generation of talent will become more pronounced as the available talent pool of Army-eligible recruits continues to shrink.

At a fundamental level, all talent development requires learning. In turn, learning requires motivation or ignition. Master coaches, educators and mentors all practice different techniques to motivate learning, skill acquisition, and solid performance. The study team identified an

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[94] Jon J. Fallensen, et. al., Center for Army Leadership Survey of Army Leadership (CASAL) Technical Report, 2016-01, 2015
[95] Ibid.

example where research indicates that even a single sentence can impact learning outcomes. Carol Dweck, social psychologist at Stanford University, has studied motivation for thirty years, focusing on the relationship between motivation and language. She conducted a study in New York with school children, consisting of three tests:

1. The first test consisted of easy puzzles. All students received their scores. Half of the students were told, "you must be smart at this," and the other half were told, "you must have worked really hard."

2. In the second test, the students were given the choice to take a harder test or an easier test. Ninety percent of the students who had been praised for their effort selected the harder test.   Most of the students who had been praised for their intellect selected the easier test. Dweck concluded that praising students for their intellect signals that the game is "look smart, don't risk making mistakes."[96]

3. The third test had the same difficulty as the first test. The students praised for their effort improved their score by thirty percent. Those praised for their intelligence declined by twenty percent.

Dweck observed the importance of clarity and affirming the struggle to build skill and competence, not intelligence or other innate gifts. Motivational statements like "you're the best" have their place but don't acknowledge/affirm the struggle. Dweck's work supports the idea that coaches affirming the ground level struggle ignite motivation—six words made a difference, and the study was repeated five times with the same results.

Dweck concluded humans "are exquisitely attuned to messages telling us what is valued."[97] People seem to be scanning their environment to discover "who am I in this framework and who am I in this setting?" [98] Applied to the Army, research could be conducted to align leader/mentor messages with what's valued, with the goal of "igniting" heretofore untapped talent.

Army leaders who ignite, coach, mentor, and teach will attract talent. They enable their teams to become smarter, and a positive talent cycle emerges, where the leader's organization is recognized as a place to grow.[99] Part of a successful TM strategy includes a deliberate decision to reward these talent magnets while also penalizing leaders who hoard talent to enhance their own careers and underutilize the talent they have. There must be consequences for ignoring and not following preferred talent practices. This is particularly important in the Army's build approach, where the Army's continued success is entirely dependent on developing the next generation of officers. Good leadership is the ultimate force-multiplier, but it's also essential to

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[96] Op. cit. Talent Code, p. 136.
[97] Op. cit. Talent Code, p. 136.
[98] Ibid.
[99] Liz Wiseman, Multipliers, p. 11.

preserving the institution, and the definition of a good leader must include alignment with the TM strategy. [100] In that regard, the trend data from CASAL is very troublesome and well worth further examination by senior leaders.

A good leader is also usually thought of as one who can think strategically. The study team believes the Army's TM system should deliberately promote this characteristic among its future senior leaders. Due to the nature of military service, in addition to operating a closed talent-building system, the Army pulls upwards of fifty percent of its recruits from those with relatives who have served in the military, leading some to refer to the Army as a "family business." This benefits the Army, because about half of its talent pool has been exposed to and has some understanding of military culture. It's also a potential detriment. Because the Army doesn't hire external leaders and must rely on innovation from within its ranks, there's always the danger of falling into group think. To guard against this and to infuse creative problem solving and innovation into its ranks, the Army must focus on strategic agility and disruptive thinking. The Army understands the importance of growing officers with the ability to think strategically. The scope of strategic thinking should increase as the officer progresses in rank and deals with larger-scale problems (Fig. 3.3). But given the Army's operational tempo for the past fifteen years, greater emphasis has been placed on tactical and operational thinking. From a TM perspective, the Army needs to rebalance by focusing on identifying strategic agility in junior officers and nurturing those traits to prepare them for national policy positions. For example, the Army could institute a new course in the strategic arts, attract and matriculate the best officers for the course, and ensure they remain competitive on the promotion and command track. These officers would be armed with academic (graduate-level) experience to engage their potential at the strategic level. As Michael Shekleton describes, the Army would:

> [P]rovide a world class graduate-level education to improve the strategic thinking and judgment of select command-track competitive officers. When coupled with a short utilization tour to lock-in these educational gains, kick starting their development of their own strategic artistry, this "Strategic School of Advanced Military Studies" could have a similar impact upon the Army as the creation of School of Advanced Military Studies nearly 30 years ago. This would provide the Army with two essential and complementary programs for our future senior leaders—one to develop operational artistry and one to develop strategic artistry. [101]

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[100] Walter F. Ulmer, Jr., Military Leadership into the 21st Century: Another "Bridge Too Far?", Parameters, Spring 1998, pp. 4-25.

[101] Michael Shekleton, Developing Strategic Leaders: An Option, 6 Dec 2016. https://thestrategybridge.org/the-bridge/2016/12/6/developing-strategic-leaders-an-option
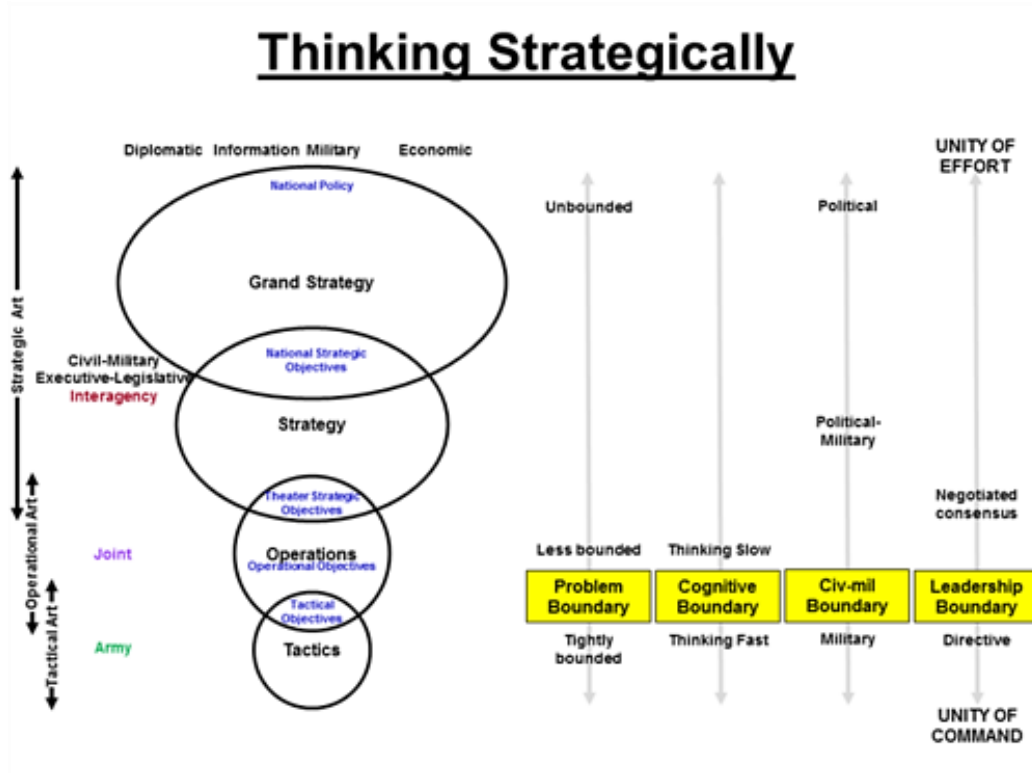
Figure 3.3 Evolution of Strategic Thinking in Army Officers[102]

3.5 SUCCESSION MANAGEMENT

The Office of Personnel Management (OPM) defines succession management as:

> Proactive and systematic process where organizations identify those positions considered to be at the core of the organization-- too critical to be left vacant or filled by any but the best qualified persons—and then create a strategic plan to fill them with experienced and capable employees.[103]

As a military organization, and in compliance with federal law, the Army regularly executes its succession management plan. Senior leaders serve 2- to 4-year terms, a turnover rate that demands the Army maintain an adequate pool of potential candidates. Large companies, comparable to the Army, have also focused on succession management, though using different techniques.

For example, PepsiCo, with 263,000 employees worldwide and $63 billion in revenue, has committed to developing talent by actively including employees in its succession management planning. Company leaders developed a succession plan in part by asking where they wanted the company to be in 20 years. They developed a blueprint and 300 critical goals, which in turn

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[102] Ibid. p. 5.

[103] https://www.opm.gov/wiki/training/Talent-Development-Glossary/Print.aspx

identified short-term talent pipeline needs. The company then identified one emergency successor for each critical job, "two people in the one- to two-year timeframe and another three people in the four- to six-year timeframe."[104] As a result, PepsiCo deliberately placed 1,500 to 1,800 potential leaders in the pipeline to fill critical posts. Once identified, the company created "intelligent profiles" where, in partnership with the individual, the company mapped career progress. For example, like the Army, PepsiCo believes employees with high promotion potential needed to be exposed to a variety of assignments across the globe. Unlike the Army, part of the career plan included determining when an individual was more likely to be able to fill such jobs, and when it was important for him or her to stay in home country. Factors taken into consideration included spouse career timelines, windows for a child's education, potential responsibilities as a caregiver for aging parents, etc. Clearly, the Army can't always accommodate when officers will best be able to serve overseas, but mapping specific and foreseeable challenges that could impact a high performer's career could help the officer and the Institution make informed decisions. Many talented junior officers the study team interviewed shared their concerns about the career choices they were facing. Conversely, leaders at PepsiCo relay the tone of career consultations are far more productive when employees can consider work/life balance.

The Army may be forced to consider Soldiers' work/life balance in the future, as societal and demographic changes shift individuals' attitudes about how much to sacrifice for a career. Individuals are increasingly unwilling to sacrifice everything to climb the ladder. In response, major corporations have already begun tailoring careers to accommodate work/life balance.

The study team believes that if he Army exercised some flexibility in its succession management processes, it could increase the number of talented officers it retains, particularly on the institutional side of the Army among its generating forces. There's already a structured and transparent process for building a talent pool and selecting operational leaders, however, selecting leadership roles for the Institutional Army doesn't mirror that process. Instead, it's siloed and there's no deliberate training or development assignments that prepare junior officers to operate and lead generating force organizations. Thus, if the Army developed the same type of succession management for institutional assignments, it could retain talented officers who leave because they don't see a clear career path. Building a junior officer talent pool with the potential for Institutional leader assignments would require the following:

- Create a team to manage the development assignments and allow officers to self-nominate for consideration.

- Use predictive analytics, individual assessments, and community of practice input to identify junior officers with strategic potential.

- Develop and manage officers with specific development assignments and training that prepares them for Institutional leader assignments.

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[104] Op. cit. Managing Talent, p. 42.

- Allow the officers to cross back over to operational assignments to build breadth.

With good reason, the last fifteen years has placed major emphasis on the operational side of the Army. However, eighty percent of the leader positions reside on the institutional side, and a balanced succession management program will position junior leaders for these assignments by ensuring broadening experience exposes them to the strategic decision-making in the institutional Army.

3.6 RETENTION

Losing talent in a closed labor pool like the Army is problematic for several reasons. First, the per capita cost of a U.S. Soldier doubled between 2001 and 2014. If projections hold, that cost will double again between 2014 and 2027.[105] Second, growing talent relies on retaining bright, capable young talent. The future Chief of Staff of the Army is among the talent pool of junior officers today.

To ensure the talent pipeline remains robust, the current Chief of Staff of the Army and his direct reports need to be directly involved in scouting for and developing talent. People in the Army who are gifted at recognizing potential need to be recognized and rewarded for building the leadership bench for the future.

Outside the military, companies invest billions to attract, develop and retain talent. Some of the guiding principles they use to retain talent include:

1. Talented individuals are considered partners, not commodities.

2. Senior leadership reinforce a culture that fosters talent.

3. Senior leadership engage directly in TM.

4. There's alignment between the business strategy and the talent strategy, with TM elements integrated in business processes.

5. Talent pools are treated personally (even though companies are managing thousands) rather than as a number.[106]

In a study of recent college graduates by Ashridge Business School, fifty-seven percent of the graduates reported they expect to leave their current job within two years. Forty percent of that group expect to leave the employer within one year, and sixteen percent expect to go as

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[105] https://bipartisanpolicy.org/library/rapid-growth-us-military-personnel-costs-driven-pay-and-benefit-increases/
[106] Op. cit. Managing Talent, p. 180.

soon as possible.[107] The main reasons stated for departing: staff didn't feel as though they were being treated with respect, or they weren't satisfied with their job advancement.[108]

There's a large gap between the military and companies regarding talent retention. The operating assumption in the Army is that current retention rates are acceptable. The study team believes that if the Army could retain more of certain kinds talent, for example, strategic thinkers, particularly at the junior officer level, it would provide a more robust pool for senior leader positions. The Army's talent pipeline depends on the junior officer pool and paying close attention to it will reap long-term benefits.

This view was supported in a 2014 study by the U.S. Naval Institute that reported falling junior officer retention rates was a result, in part, of the "reduction of decision-making at the commanding officer level." One Navy commander noted "erosion of independent decision-making and the perception of risk aversion as a significant detractor when discussing reasons for falling junior officer retention rates."[109] A lack of creativity and lack of support for risk-taking, both common in the military, generally hurt retention. On the other hand, an important booster of retention is work with a purpose and job advancement, which are strengths for the military.

3.7 AN INTEGRATED TALENT MANAGEMENT ENTERPRISE (ITME)

As noted earlier, the Army doesn't need to beat its competitors in earnings, but it does have to compete for talent. The study team observed best practices in organizations that recognized the global competition for talent and responded with an integrated TM enterprise (ITME). Should the Army decide to approach TM from a strategic perspective, the benefits would be real, and its capacity to accomplish specialized missions would increase over time.

In commercial industry, the long-term benefits of an ITME were reported by Boston Consulting Group, which designed a Global Leadership and Talent Index that surveyed 1,263 Executives in 85 countries. The index confirmed companies that are successful at attracting, developing and retaining talent outperform companies that don't perform these TM functions well (Fig. 3.4). "The talent magnets had an average capability score of 2.5 (on a scale of –3 to 3), while the talent laggards had an average score of –2.2."[110]
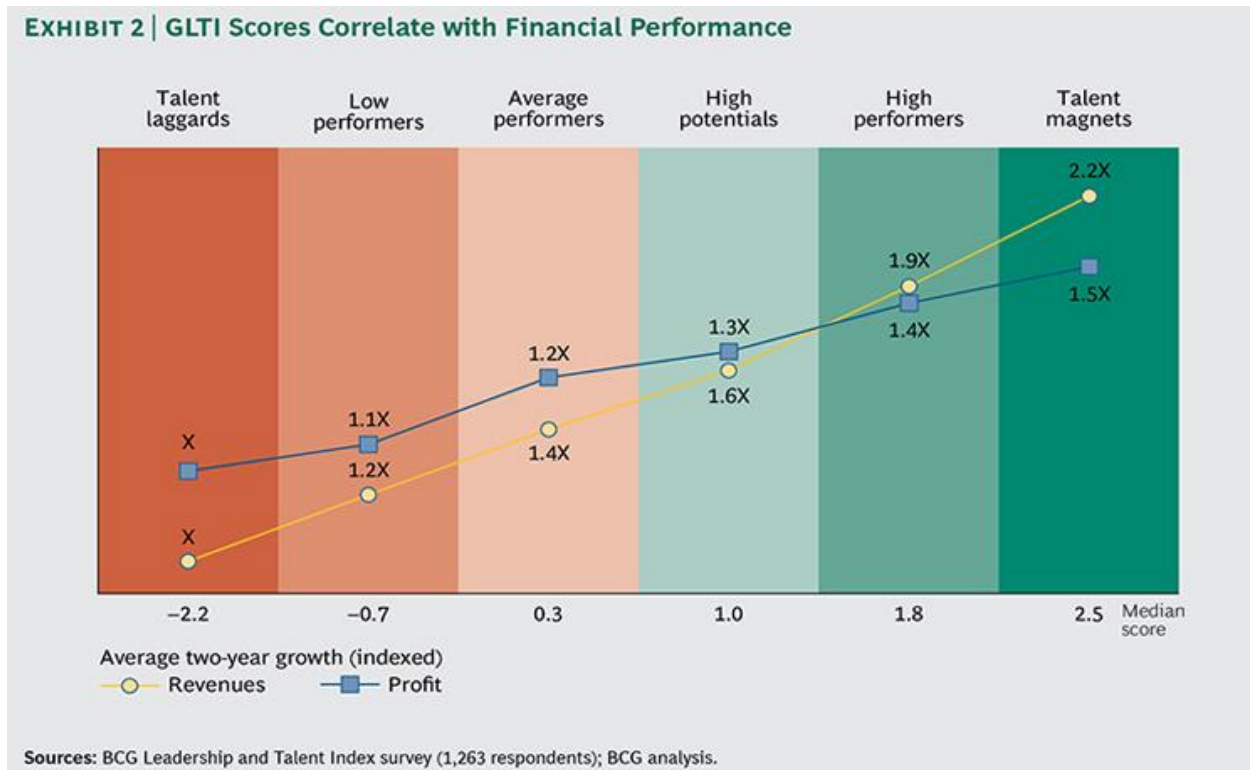
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[107] Ibid. p. 81.
[108] Ibid. p. 82.
[109] Lieutenant Barry Scott (USN), Restore the Culture of Command. *Proceedings.* US Naval Institute, Aug 2015.
[110] The Global Leadership and Talent Index: The Smart Way to Improve Capabilities—and Create Value, Boston Consulting Group, https://www.bcg.com/publications/2015/leadership-talent-human-resources-global-leadership-talent-index.aspx

EXHIBIT 2 | GLTI Scores Correlate with Financial Performance

Figure 3.4 Global Leadership Talent Index[111]

Boston Consulting Group also identified characteristics that define talent magnets:

- Leadership and Talent Model: Defining clear leadership competencies specific to the company's strategy and culture, and embedding those competencies in selection, development, promotion, and reward processes

- Talent Sourcing: Finding leaders and talent, both internally and externally; tailoring employer branding to specific talent pools; managing and developing successors effectively

- People Development: Systematically nurturing people by providing comprehensive and structured development opportunities, training, and tools

- Engagement: Fostering meritocracy and engagement throughout the company, especially among leaders and top talent

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[111] Ibid.

- Culture: Requiring top leaders to take responsibility for leadership and TM by adhering to corporate values"[112]

The index reinforces the tenet that talent investment reaps tangible, positive results. It also creates context for the competitive environment the Army faces now and within the next decade. The dimensions identified—leadership and talent model, talent sourcing, people development, engagement and culture—should all be strengths the Army could leverage in developing its ITME.

[112] Ibid.

4. ITME ENABLERS

The Army must commission officers who are likely to perform well as junior officers, fit into the Army's culture, demonstrate leadership potential for higher ranks, and stay beyond their initial Active Duty Service Obligation (ADSO)

Army Research Institute[113]

To make its junior officers want to serve beyond their ADSO, there are several enablers that the Army could use to build its ITME, some of which are already in place. The study team made various findings and recommendations around the technology currently available to support TM. More specifically for the Army, the study team proposed organizational support in the form of a talent proving ground and a systems integration laboratory (SIL).

4.1 TOOLS AND TECHNOLOGIES TO SUPPORT TM

Big data analytics, or the detection of statistical patterns in large data sets, can positively impact many of the core focus areas of TM. For example, in talent acquisition, analytics can help identify the elements of hiring success. Algorithms can successfully predict the characteristics of applicants and interviewees who will perform successfully on the job. Likewise, the introduction of additional technologies and tools can assist with data collection to expose otherwise hidden correlations (Fig. 4.0).
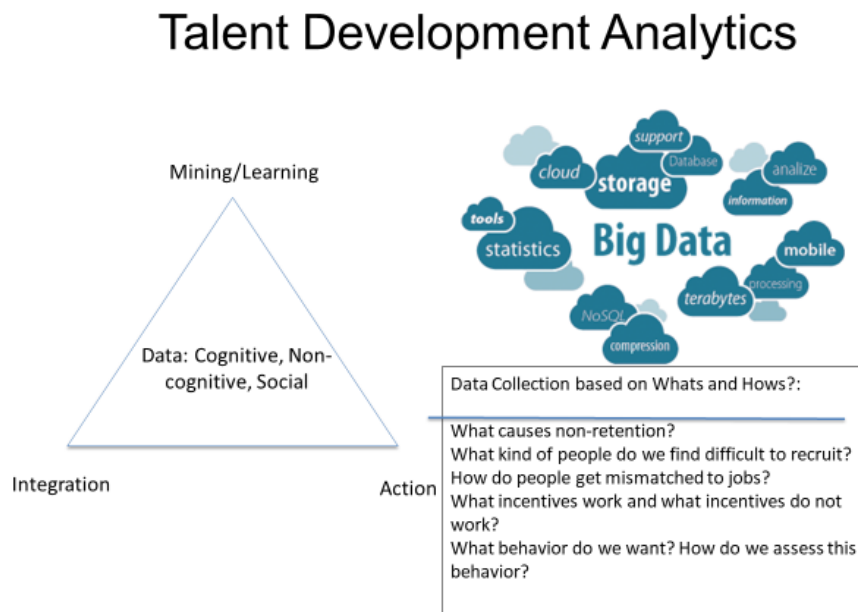

Figure 4.0 Talent Development Analytics

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[113] Cheryl Paullin, et. al. Army Officer Job Analysis: Identifying Performance Requirements to Inform Officer Selection and Assignment, Human Resources Research Organization, Army Research Institute, Aug 2011, Technical Report 1295, p. 16.

With this infrastructure in place, the Army could learn new things about the talent pipeline and uncover potential that's currently hidden from view. Developments in artificial intelligence and machine learning have produced the ability to digest enormous amounts of data and identify underlying patterns of success that will inform decision makers who are looking for potential. For example, analytic tools such as recommendation engines, social network analysis, and sensor fusion are available to deploy in support of TM.

The Army collects a great deal of data on each of its officers, including home of record, gender, race, marital status, colleges attended, blood type, religion, etc. It tracks health and fitness, months deployed, awards and decorations, and it records the number and type of training courses completed, positions held, dates of promotion, and level of clearance. Most of this information is compiled in the Officer's Record Brief (ORB.) Unfortunately, this is simply accounting data. To unleash the full potential of the officer corps, the Army needs to deploy decision support on the data to produce information that reveals what motivates the officer, what the officer values, aspirations, incentivization, special skills and education, etc. In other words, analytics could uncover an officer's talents and provide some insight on how to ignite him or her to next-level performance.[114]

Aggregating this data so that it supports TM analytics could have an immediate, positive effect on the Army. For example, the analytics could be put to work matching jobs to applicants. This is an important consideration for the Army, considering it maintains an internal talent/labor market. The Army could realize efficiencies, i.e., employ its resources most effectively, by matching officers' talent with specialized job requests and descriptions. Eventually, the Army could establish a recommendation engine to produce best fits between candidate and job (Fig. 4.1). The Army could bolster this effort by taking into account the lessons learned from OEMA's talent matching project, Green Pages.
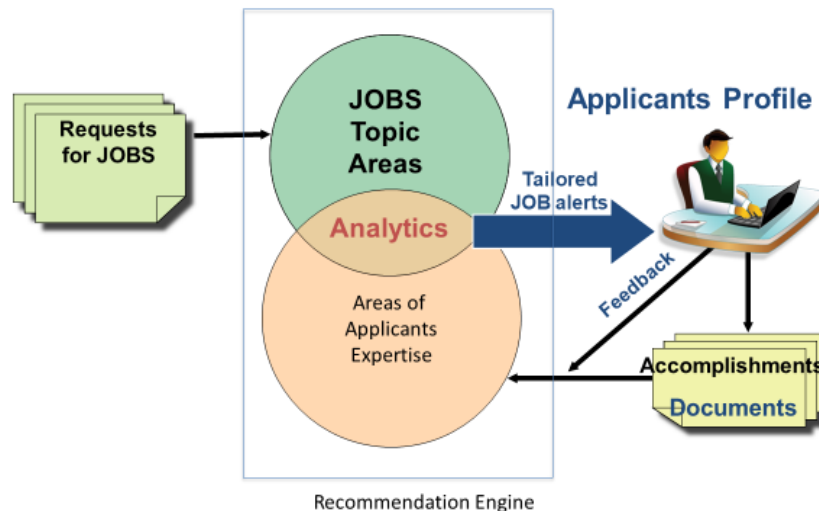
Figure 4.1 Talent Marketplace

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[114] http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1188

Another critical component of an ITME is the provision of tools for learning and skills enhancement. The study team believes this is especially important for high potential members of the TM pool to sustain their engagement and retention. The desired training environment should be collaborative, immersive, challenging and equipped with the latest pedagogy and technology. Encouraging individuals to learn at their own pace rather than be tied to a specific time schedule is critical. For example, the Army relies upon time in grade restrictions to set the pace for training, formal education, evaluations, and advancement.

Companies use several tools and technologies to support learning and skill enhancement. Some tools that companies have found useful include: learning management software, online learning (on-demand), web-based training (webinars), 360-degree feedback, multi-rater feedback tools, and online communities of practice. All of these (except learning management software) were internally developed.[115] The Army has also developed several of these tools, but they haven't been marshalled in a concerted effort to improve TM.

The Army has also explored (via the Combined Arms Center) a training and education modernization strategy that embodies some of the desired traits of an integrated, holistic training environment. It leverages constructive learning, virtual/augmented reality, and gaming technology to create a common environment that provides seamless support across collective live and synthetic training activities. The modernization effort would develop immersive and distributed training capabilities, decrease the time for Soldiers to acquire mission critical technical skills, increase the time spent on collective training exercises, increase the realism of the training activity, and decrease overall training costs.

In addition, several research efforts across the Army Research Laboratory (ARL), industry, and academia are developing enabling technologies to aid in training and education modernization. Examples include: artificial intelligence and intelligent tutoring systems (ARL-HRED); realistic gaming and simulations (TRADOC Capability Manager for Gaming); augmented reality in 2D and 3D on small platform devices (Ostendo Technologies Inc., Microsoft, AMD, ARL-HRED STTC); big data, training and operation pedagogy in mixed reality environments; and "idea spaces" (analogous to maker-spaces) with technology tools seamlessly woven into a collaborative learning community (Association for Talent Development – Learning Technologies). Another critical area under development in various parts of ARL is the creation of a single, synthetic "world environment" that encompasses land, sea, air, space, and cyber. This integrated, holistic training environment will enhance Soldier learning and training outcomes, and it will serve as a critical component of the Army's ITME, as it will assist in the development and retention of the next generation of skilled Army leaders.

Finally, recent advances in cognitive science and data science are opening opportunities to leverage benefits from deep learning, collective intelligence, team design, deep practice, virtual reality tools, and people analytics.

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[115] Op. cit. Best Practices in Talent Management, p. 281.

This may seem a daunting list, and it's true that no corporation or organization the study team observed was leveraging all the available tools and techniques to manage talent. But it's also true that TM as a discipline offers the potential for great improvement.

> Unlike other disciplines, such as corporate finance, leadership and TM is a relatively undeveloped field in the application of data- and evidence-based approaches to value creation. Most companies do not address the most fundamental questions around leadership and talent development, despite huge expenditures—$40 billion annually by some estimates.[116]

4.2 TM PROVING GROUND

As part of the Army's development of an ITME, it will be necessary to test and experiment with best practices from outside the Army and to rehearse the application of knowledge acquired from inside the Army. Both efforts could take place in a Talent Proving Ground (TPG). Just as the Army has Aberdeen Proving Ground for experimenting with and testing ordnance, Dugway for chemical and biological weapons, and Yuma for military equipment, the Army's TPG would be established to develop and test innovative approaches in managing talent. The primary function of the TPG would be to move conceptual knowledge, lessons learned, and collective experience regarding TM into application. The TPG would marshal both intellectual and operational resources to facilitate institutional learning.

The TPG will allow the Army to test new TM techniques in a controlled environment. It will also allow the Army to conduct pilot studies on a limited portion of the Army. The advantage here will be that the Army can conduct formal, cost efficient experiments to assess the viability of TM best practices within the Army context. Finally, the TPG will serve as the official hub to collect best practices within the Army, as a conduit of information on those from outside the Army, and as an accelerator to transition from experiment to policy. In other words, there will be no "valley of death" for TM techniques and technology.

The TPG could have an immediate impact in the realm of team training. Officers serving in 2030 will be leading Soldiers in a more complex, rapidly changing environment. It will be increasingly difficult for leaders to have the same levels of situational awareness the U.S. enjoyed when it maintained overmatch on the battlefield, e.g., during Operations Desert Shield and Desert Storm, so it will be critical to accelerate both individual and team learning. Part of that effort will require officers to understand how they themselves learn, as well as how to accelerate learning within their teams.

A study conducted by the Australian Army underscores the importance of collective training.[117] The authors argue that the Australian Army needs to advance its training methodology,

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[116] Op. cit. The Global Leadership and Talent Index
[117] Building on Beersheba: The Future Army, Discussion paper Two: A Strategic Approach to Collective Training. 2014; pp. 4-6.

focusing on collective training, to prepare for future contingencies and to build resilience against dynamic and evolving threats. They further advocate the importance of acquiring mission critical knowledge and skills in training activities through innovation and creativity, not through certification.

The takeaway from the Australian Army study is that the culture surrounding training is important. If Army officers aren't experimenting and testing hypotheses in training for fear of failure, their talent will be sub-optimized. Thus, the TPG should allow for failure, and learning from failure. Any modernization of training and education in the Army should embrace experimentation and productive failure as opposed to a fear of failure. Retired Lieutenant General Walter F. Ulmer, Jr., author of several books on military leadership, has provided a model that focuses on how officers learn. Using his own example, he explains:

> "I learned to displace the mortars more frequently, so they can provide continuous coverage to the advancing troops." A deeper learning might be, "I learned that I need to change my behavior and approach to the staff so that they can interrupt me if necessary to get timely approval to displace the mortars. Or, perhaps I should delegate that authority to my operations officer or fire support officer."[118]

As Army missions become more complex and future threats become more dynamic, the Army will need to develop leaders with the skill sets necessary to manage that environment. The TPG will provide a space to review and to evaluate best practices and apply them in a manner that's organic to the Army.

4.3 TM SYSTEMS INTEGRATION LAB (TM SIL)

Just as Intelligence Preparation of the Battlefield and Situation Awareness provide Army Commanders with information on an adversary's location, activities, capabilities and vulnerabilities, an ITME provides information on the Army's capabilities, areas of expertise, talent gaps, and availability for specific missions.

Both Army intelligence and ITME require an infrastructure that captures data, stores it persistently (for trend analysis), analyzes the data for information extraction, and provides geographically-distributed access to the information to support Army Commanders in mission planning, team composition, and other decision making. An ITME would provide Army leadership with the ability to war game future scenarios and to include the talent preparation needed to support the technological advances for future missions and concepts of operation.

The Army currently doesn't have an integrated infrastructure to provide Commanders with data, analysis products, trends and predictions related to TM. The Army collects a tremendous amount of data on Soldiers but is currently unable to use this information effectively beyond MOS assignments and promotions. Because of the lack of an ITME, the Army currently must

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[118] Op. cit. Military Leadership into the 21st Century, pp. 4-25.

make decisions related to TM based on ad hoc networks of information, without an understanding of all the Army's available talent.

The Army does have an initiative that could serve as the basis for the ITM SIL, including experience with Army databases, The Army Analytics Group (AAG) Person Data Environment (PDE), which provides access to 250 Army databases. The AAG-PDE project has addressed several data infrastructure issues, including ingesting, normalizing and securely storing high-volume Army data, running algorithms over integrated data sets, determining and tracking the restrictions on the data, and providing a policy-based web portal for data access, analysis, and report generation.

Developing an Army TM SIL would support data integration, data analysis, and information extraction for all phases of ITME. By having all current Army TM data integrated into a common architecture at the SIL, the quality and usefulness of each data type could be evaluated. Gaps in the Army ITME knowledge system would be rapidly identified, and alternative solutions to improve forms, tests, and processes could be evaluated. For example, internet companies use a process called "A-B testing" to determine the relative effectiveness of two versions of the same web page by collecting user data as the web page versions are used. The Army ITME SIL could use this and other methods to evaluate forms, tests and processes for redundancy, efficiency, and effectiveness. Enhancing the data collected on officers to include 360 evaluations, personal preferences, self-nominated talents and experiences, and test data could improve officer–assignment fit, team composition, and the retention of talented officers. Higher-level, aggregate data on officer skills and talent could be used to identify trends and to create projections for future recruiting, training, and retention priorities.

While there are numerous commercial TM software solutions and processes available, many will not be applicable to the Army's unique use cases and requirements. The Army ITME SIL would provide an environment for rapid integration and testing of commercial solutions on Army TM databases to determine the usefulness of the capabilities for the Army ITME. Pilot testing of the utility of commercial TM products should include the ability to process data at high scale. Best-of-breed studies of TM alternatives in the Army ITME SIL will ensure that the Army is using appropriate technologies for the Army mission.

In a similar manner, emerging research related to TM, including advances in data mining, predictive analytics, performance testing, and optimizing team composition can be evaluated against Army data for potential integration into the Army ITME. The AAG-PDE effort currently provides a controlled-access portal for researchers to use Army data for research initiatives.

The study team believes the SIL should have a scalable data infrastructure, common data dictionaries and taxonomies, policy-based data access, and a web-based portal for global access.

5. CONCLUSION

For two hundred and forty-four years, the Army has relied on a build strategy for managing talent. It's been successful, and for some time, the Army was considered the benchmark for leadership training and education. During this period, commercial industry incorporated the Army model. Now, however, several factors have reversed the tide. The Army needs to leverage best practices from commercial industry to counter the rapid developments in various technologies that have narrowed its decisive overmatch in contested domains.

The study team found the Army's current build model is strained by: (1) U.S demographics pointing toward a declining talent pool of eligible candidates; (2) the increasing complexity of tasks requiring technical depth and extended learning; (3) shifting attitudes about work, i.e., work/life balance, which is difficult to maintain in the military; and (4) collegiate educational benefits, the formerly compelling reason for high school students to join the Army, are now being provided by corporations, some states, etc. which has weakened the incentive to join the Army.

Conversely, corporations that employ a build model tap a global talent pool, maintain a strategic vision of their operations, deliberately address work/life balance, and provide educational opportunities to develop and strengthen their talent.

5.1 FINDINGS AND RECOMMENDATIONS

The Army's Human Resources Command (HRC) handles the monumental task of delivering human capital to ensure the Army has capability and capacity in the right places at the right time. While a great deal of planning is required for that effort, the evolution from personnel management to TM will require focusing on the talent pipeline to ensure there's a pool of qualified individuals and teams available as required. In short, a strategic endeavor beyond what is currently in place.

To make that evolution, the study team made the following findings and recommendations:

1. Enhance and integrate TM

Findings:

- Current Army Personnel Management is Distributed, Siloed and lacks unified Senior Leadership

- Workforce Planning does not occur beyond the POM cycle

- Talent Acquisition does not use common talent assessment protocol across the enterprise system e.g. West Point, ROTC, OCS

- Performance management is not standardized across the enterprise system e.g. 360 evaluation/counseling not widely adopted

- ITME is essential for Army to create a quality force capable of meeting global challenges with fewer Soldiers

Recommendation:

SEC Army through CSA task TRADOC to design and implement an ITME under a single leader

An integrated TM approach is the best way to ensure senior leaders will have prior visibility on potential shortfalls and can leverage the entire TM enterprise to address the concern before it becomes a crisis. For example, data scientists are and will continue to be in short supply in the Army. Integrating elements of TM will create an alignment of effort that, coupled with a single senior officer responsible for the entire ITME, will allow the Army to stay ahead of this and future talent needs. The ITME will also ensure policies and procedures are aligned across the distinct TM functions (recruitment, performance management, succession planning and retention, etc.).

2. Enhance Army learning and leadership by creating a talent proving ground

Findings:

- Current Army training and education is not fully taking advantage of recent advances in neuroscience research, learning strategies, and educational technology

- Recent advances in sophisticated team design, customized learning, skill development (particularly in STEM) and leadership assessment are not being leveraged

- The Army lacks a TM proving ground.

Recommendation:

SEC Army through CSA task TRADOC to create a TM proving ground to test latest advances

Creating the Talent Proving Ground (TPG) will assist the Army in determining which assessments aid in the process of discovering, developing, and retaining talent. Commercial industry is using multiple assessments to discover, develop, and retain, and it will be vital for the Army to determine which efforts are good fits, both culturally and in terms of scale. Experiments will be key. For example, the TPG would conduct experiments on team design, providing direct support to commanders by turning an ad hoc process that's largely run on instinct into a deliberately designed practice aimed at optimizing performance.

3. Establish an Army ITME Systems Integration Lab (SIL)

Findings:

- Current Army TM System does not have a shared database for Officer management

- Technology infrastructure is not able to support enterprise data access and advanced analytics

- IPPS-A plans to integrate four HR / Financial databases

- AAG-PDE project provides unified / policy access to 250 Army databases

Recommendations:

ASA MR&A Sponsor an Army SIL with the following ITM Functions:

- Scalable data infrastructure using lightweight federated distributed database architecture

- Data management enabled by common data dictionaries and taxonomies

- Web-based portal for global ITM data, data analysis, and report access, controlled by Army roles and policies

The SIL will highlight expertise, talent gaps, and the availability of specified capabilities for unique missions. It will also support a strategic approach to TM by, e.g., identifying precision incentives that need to be offered to ensure the Army addresses talent short-falls before they materialize.

4. Create talent pool through broadening assignments

Findings:

- The broadening assignment process is inconsistent across the enterprise, particularly in the Generating Force

- Formal process to identify leader pools for operational assignments

- Siloed process to identify leader pools to fill institutional assignments

- Building junior officer talent pool with potential to operate and to lead Generating Force organization is lacking

Recommendation:

SEC Army task CSA to sponsor a pilot project to build a talent pool for critical Generating Force positions through broadening assignments

- Focus on the Generating Force

- Use predictive analytics, individual assessments and community of practice input to discover junior officers with strategic potential and to make assignments

- Develop and manage officers considering the following:

  – Identify specific developmental assignments and training

  – Create a team to manage the developmental assignments

 – Officers self-nominate; pool does not limit operational assignment consideration

This recommendation focuses in large part on succession management and retention, which are closely linked, and even more so for the Army because it grows its own talent. The Army needs better visibility on the talents of its current officer corps. Creating portfolios that include officers' talents (many acquired outside the Army) will assist the Army in matching skills, abilities, and interest with a specific mission, task, and/or assignment. As the Army drives talent selection decisions based more and more on specific information, satisfaction with the matching system will increase for both the individual and the institution.

Obviously, succession management occurs in the Army, but replacing some of the informal, ad hoc processes with a more strategic approach would allow the Army to focus on building "the bench," i.e., creating a robust talent pool for critical assignments. For example, under the current system, senior leaders are faced with limited options for senior and/or critical assignments. Once the ITME develops and the tools enumerated in previous recommendations mature, senior leaders will have more options, and the pool of candidates will be identified in the context of current and future Army needs, personal strengths, best fit, etc.

5.2 IMPLEMENTATION

The study team's recommendations were designed to set out one possible method for implementing an ITME. The plan would yield immediate returns by assisting the Army in identifying and developing the talents of its individuals and optimizing team performance (Fig. 5.1). Commanders would have a portfolio of Soldier talents to assist in officer development

and to inform team composition. In turn, senior leaders will have a deeper understanding of enterprise-wide talent.
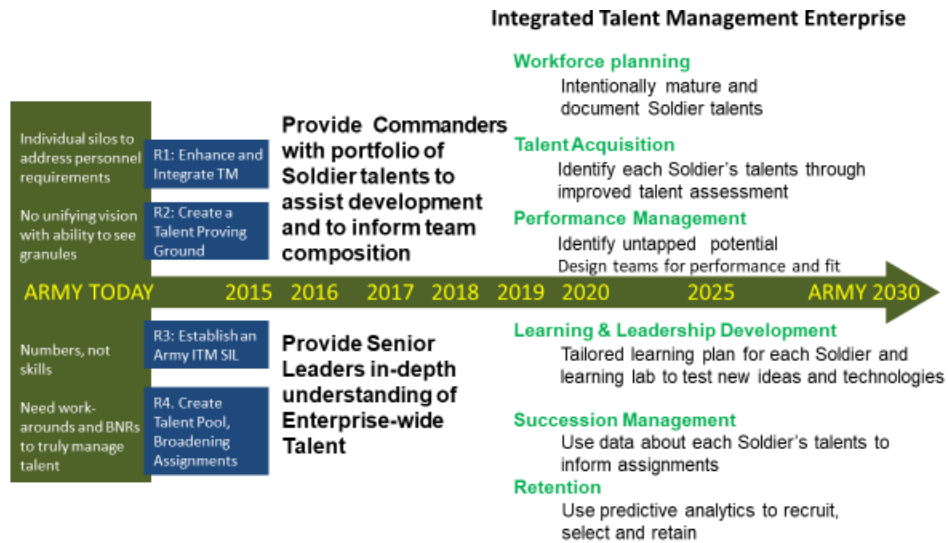
Figure 5.0 ITME Implementation

It will be important to articulate the Army's TM vision and cascade it throughout the officer corps. Senior leaders have committed to looking at knowledge, skills, and desires of the Army's officers when matching Soldiers to specific job requirements. They must look at team composition as well. Team design is a next-level TM function, but the Army is already poised to do this more effectively, given the amount of data it collects on individual Soldiers. Individual contributors perform better on a team in which they have a good "fit," as opposed to a team randomly thrown together.

From the outset, the Army's TM vision needs to address individuals, teams, and enterprise-wide requirements simultaneously. The ITME can only exist as a systemic whole with strategic alignment among the components and execution where each component supports the other.

EPILOGUE

In 2013, the Secretary of the Army identified TM as a topic the Army needed to explore and requested the ASB to take part in that exploration. Since the ASB adopted the study team's findings and recommendations by unanimous vote in September of 2014 (see Appendix D), the Army has released the Army Operating Concept (Oct. 2014), Army Leader Development Strategy (Oct. 2015), Army Human Dimension White Paper (Jun. 2015), Talent Management Concept of Operation for Force 2025 (Sep. 2015) and the Field Manual 6-22 for Leader Development (Jun. 2015). The ASB study team participated in and/or informed each of these initiatives.

Specifically, the findings and recommendations outlined in this report were used by CG TRADOC (GEN David G. Perkins) as a reference for the Army's TM Concept of Operations. The study team's work helped focus TRADOC's efforts and informed CAC-T in developing associated TM white papers and the Army's Talent Management Strategy. The ASB study chair was asked to provide recommendations to an Army-level, TM Task Force that accelerated iterative development of the Integrated Personnel and Pay System – Army (IPPS-A) and provided renewed focus on the governance/planning within the Army's human capital enterprise.

As the study team briefed its findings and recommendations to Army senior leaders, its work had a growing impact on the Army's move to a TM model. COL Peter S. Im, Director of the Human Dimension Capability Development Task Force, relayed:

> Working with the ASB on Talent Management was fortuitous for TRADOC. It was apparent that the scope of the ASB's investigation, interviews, and ASB team composition – the Talent Management Study was far more comprehensive than what we understood in TRADOC. Of note, the ASB Talent Management Bibliography (research) confirmed key stakeholders and SMEs, as well as expanded our later outreach and exploration efforts.[119]

In 2015, the ASB study chair was invited to participate in DoD's Force of the Future Initiative, sponsored by the Acting Under Secretary of Defense for Personnel and Readiness (Brad Carson). The goal of the initiative was to maintain the U.S. military's competitive edge by bringing in top talent to serve the nation.

During his recent visit to the Human Resources Command at Fort Knox, KY, newly appointed Secretary of the Army, Dr. Mark Esper, emphasized the importance of TM. He saw first-hand the Human Resource Assignment Interaction Module 2.0 (AIM 2) which is a web-based tool that allows Soldiers to post resumes, facilitating a match between the Soldier's skills, interests, and the needs of the Army. This is an encouraging step in the Army's development of a talent marketplace (see Section 4.1).

Dr. Esper also posed an important question:

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[119] Correspondence to ASB Chair; Feb 2017.

I've seen a lot of different personnel management models. On the one hand we're unique, on the other hand we're not, so I'm anxious to see how we get to that next level, whether that's revolutionary or evolutionary, how do we get there?[120]

The focus and attention of senior leaders is critical. The Army is in a war for talent and the Institution needs to recognize the reality before the crisis. For example, a 2018 study by The Heritage Foundation found the following:

The military depends on a constant flow of volunteers every year. According to 2017 Pentagon data, 71 percent of young Americans be-tween 17 and 24 are ineligible to serve in the United States military. Put another way: Over 24 million of the 34 million people of that age group cannot join the armed forces—even if they wanted to. This is an alarming situation that threatens the country's fundamental national security. If only 29 percent of the nation's young adults are qualified to serve, and if this trend continues, it is inevitable that the U.S. military will suffer from a lack of manpower. A manpower shortage in the United States Armed Forces directly compromises national security[121]

Given these and other current indicators, the talent shortage is real, and the Army needs to commit to sustained, integrated focus on recruiting, developing, and retaining talented officers.

Much can be done within the Army to leverage the talent of its officer corps without requiring a change in the Defense Personnel Management Act (DOPMA). This study has focused on some of the steps the Army can take, and three years after it concluded, there are many opportunities that remain to be taken.

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[120] Brian Hamilton (MSGT, USA), Talent Management Enhances Total Force Readiness, 6 Apr 2018, https://www.army.mil /article/203537/talent_management_enhances_total_force_readiness
[121] Thomas Spoehr and Bridget Handy, "The Looming National Security Crisis: Young Americans Unable to Serve in the Military," http://report.heritage.org/bg3282.

APPENDIX A: TERMS OF REFERENCE

SECRETARY OF THE ARMY
WASHINGTON
MAR 1 1 2014

Mr. George Singley
Chairman, Army Science Board
101 Army Pentagon
Washington, DC 20310

Dear Mr. Singley:

I request that the Army Science board conduct a study titled, "Talent Management and the Next Training Revolution." The study should be guided by, but not necessarily limited to, the Terms of Reference described herein.

The purpose of the study is threefold:

a. Develop a definitive concept of talent the Army should use to describe the individuals and teams it needs to recruit, train and retain through 2030. In broad terms, the Army should have the capacity to assign the right person to a position that maximizes team productivity and the overall performance of the Army, while best suiting each individual's capabilities, experience, character and interests. This conceptual framework should be sufficient to drive doctrinal statements in future Army publications.

b. Examine and evaluate current technologies employed in talent management, to include recruiting, training and retention. Improvements in information management systems offer opportunities for the Army to manage talent and achieve peak performance in its force. For example, "big data" analysis has led to significant performance successes in commerce, sports, industry and government, due in large part to a training revolution that customizes training at the individual level. This evaluation should assess the expected performance of talent management technologies applied to the Army, specifically providing estimates for operational improvements to meet talent requirements through 2030.

c. Develop a roadmap for the employment of promising talent management systems and associated technologies. The evaluation of best practices and technologies must take into consideration the unique nature of military service. It should also make use of, but not be constrained by, current performance metrics the Army uses. As stated, the roadmap should meet the Army's personnel requirements through 2030.

In a broader context, the deliberate execution of talent management systems has demonstrated considerable utility in civilian business and industry, typically at times when an organization faced fiscal constraints. The Army is now experiencing that environment of constrained resources. It has sustained a state of continuous war for the past 12 years—the longest in our Nation's history—yet, as a result of budget

- 2 -

constraints, the Army must reduce its end strength to post-wartime levels. Thus, if the Army is to maintain its ability to field a capable force that meets mission requirements through 2030, it is imperative that it recruits, trains and retains the most talented Soldiers going forward.
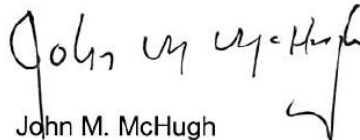
Specific lines of inquiry should aim to answer the following questions:

a. What is the Army currently doing to select and advance talented individuals and teams?

b. What tools (big data, predictive analytics, etc.) and techniques (for example, customized training) are other organizations using to manage talent?

c. Is it possible to transfer best practices in recruitment, training and retention to the Army?

d. Does the Army have pockets of innovative talent management practices that it should bolster and/or advance?

The scope of this study will be the Active component of the Army. However, as the Army faces a future with an uncertain level of resources, I ask that the Board focus on the one certain, high-payoff investment the Army has always relied on during its 238-year history: its leaders. The training, education, development and experience of our leaders are the pillars of the Army's strategy, and this study should ensure we cultivate, manage and optimize their talents.

As the study sponsor, I ask that this effort conclude with a briefing provided by September 30, 2014, including all findings and recommendations. I further ask that you provide a final written report by October 31, 2014. The briefing and report will offer actionable recommendations. The study will operate in accordance with the Federal Advisory Committee Act and Department of Defense Directive 5105.4 (Department of Defense Federal Advisory Committee Management Program.) This study need not go into any particular matters regarding the interpretation of the United States Code or cause any member of the study team to be placed in the position of acting as a procurement official.

Sincerely,

John M. McHugh

APPENDIX B: STUDY TEAM MEMBERS

Ms. Mary Crannell, Chair

Dr. Lester Martinez-Lopez, Vice Chair

Mr. Tom Ramos, Vice Chair

Siddharta Dalal, PhD.	Maria Mouratidis, PhD.
Meg Harrell	Olugbemiga Olatidoye, PhD.
Mr. Gil Herrara	Chris Rose, PhD.
Jill Keith Harp, PhD.	Marcus Shute, PhD.
Ms. Meg Kulungowski	Bruce Swett, PhD.
Sung Lee, PhD.	Grant Warner, PhD.

Joseph Braddock, PhD., Senior Fellow

LTC Andrew Sherman, Study Manager

Mark Swiatek, Technical Writer

APPENDIX C: U.S. ARMY PRACTICES AFFECTING TM

The study team conducted an extensive survey of the Army's personnel management system to identify specific effects on TM for the officer corps, both positive and negative. These included:

1. Accession

- Only a fraction of America's youth is both eligible for military service and interested in serving. Of the four million men and women who turn 18 each year, only 1.2 million (29%) meet recruitment standards and are eligible to serve. [122]

- The inherent military hierarchy may be less appealing for exceptionally bright youth.

- The American public lacks awareness of what the Army does, and of the variety of training and career opportunities available in the Army.

- The demands of Army life are a barrier to attracting and retaining individuals who value work/life balance.

2. Development/Promotion

- The Army lacks the ability to assess cognitive and social skills before accessing and placing individuals in a career field.

- The military is a closed system which must internally grow, rather than laterally hire, its talent. This presents additional challenges, such as the need to predict the talent required in the future and to retain that talent.

- Proficiency at lower paygrades is not necessarily reflective of prospective talent or success at higher grades.

- The Defense Officer Personnel Management Act (DOPMA) presents several challenges to managing Army talent in the officer ranks, and while DOPMA could be revised, an overhaul addressing the following challenges would likely take several years:

  - Time in Grade (TIG) is mandated before promotion to the next rank, and thus the number of developmental opportunities is limited within each grade. This presents a tension between depth and breadth of experience, as officers cannot experience multiple assignments without shortening each to fit within the TIG restrictions.

  - TIG restrictions create a tension between what's considered the best assignment policy for organizations (i.e., stable leadership) versus individuals (i.e., broadening).

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[122]Transforming US Military by Ash Carter, 23 May 2017, page 2

- Up-or-out restrictions preclude individuals from extending time at a position or level of responsibility, regardless of their success in that position.

- Officers experience a tension between accepting assignments they might prefer and be successful at, versus following key developmental assignments that will increase the likelihood of promotion.

- Because of up-or-out rules, the system is inherently competitive within each peer group, as everyone competes for limited promotion opportunities.

- The proportion of officers at each pay grade are dictated, not determined by the needs of the Army.

- There is no formal feedback mechanism separate from formal evaluation and promotion; informal feedback or "counseling" often does not occur as intended.

- The current structure to identify and place officers in assignments is shortsighted in terms of being based upon current and imminent openings, rather than basing assignments upon a deliberate succession-planning for future opportunities.

- Because command assignments are required for promotion, officers are rotated through company command. This reduces the time that talented leaders can command.

- With few exceptions, the assignment process considers only one assignment at a time, rather than a string of two or more assignments.

- Branch selection pre-determines which officers are most likely to rise to the highest level of the Army.

- Officers are described and judged by the assignments they have completed without failure, rather than by the individual's successes while in an assignment.

- While assignments are critically important to career progression, most are determined by a decentralized, unmonitored process that varies by branch and individual assignments officers.

- The unique nature of many career fields, skills, and expertise restricts the opportunity to gain valuable lessons from the civilian community. For example, only the Army can best develop and train armor officers.

- Unconstrained training demands (especially ancillary training) place tremendous burdens on young leaders and limit their opportunities to develop experience in their primary job descriptions.

- Relatively few opportunities for advanced education during an officer's career.

3. Personnel Management

- A smaller Army must be comparatively more manageable; a smaller Army cannot afford a large administrative component.

- There's no continuum of service that might permit a repository of skills and expertise in the Reserve Component that could be shifted easily into the Active Component, given a shift in mission.

- A smaller Army must be nimble and agile; officers may need to fill multiple roles.

- The lack of data and information about actual expertise and experience, such as how many times an individual deployed to different locations, what the officer did while on deployment, personal socio-economic background, and personal or family affiliations and experiences, precludes optimal TM.

4. Retention/Separation

- The current retirement system provides little retention incentive for early-career officers.

- The current retirement system limits the Army's ability to manage late-career officers; the system is "stuck" with officers beyond 15 YOS.

- The tremendous physical demands of the career result in a high "breakage" rate among officers. Thus, even highly-committed people who want to remain in the Army may not be able to do so. From a management perspective, it is difficult to predict who will be physically ineligible to continue.

- During downsizing, the Army will be challenged to retain the best and brightest. Some will leave for civilian opportunities, given the uncertainty. Further, retention decisions are often managed by career field, so some better officers may be eliminated because of reductions in that particular occupation.

- When the Army is decreasing in size, officers are likely to be more risk adverse and less innovative, rather than risk an error that could be career-ending.

APPENDIX D: ASB APPROVED BRIEFING WITH FINDINGS AND RECOMMENDATIONS (SEP 2014)

Talent Management (TM)

Army Science Board

September 18, 2014

Army Science Board   1

TOR & Scope of the Study

- **Answer the following four questions:**

  Q1. What is the Army currently doing to select and advance talented individuals and teams?

  Q2. Is it possible to transfer best practices in recruitment, training, and retention to the Army?

  Q3. Does the Army have pockets of innovative TM practices that it should bolster?

  Q4. What tools (big data, predictive analytics, etc.) and techniques (customized training) are other organizations using to manage talent?

- **Evaluate current talent management technologies, including recruiting, training, and retention**

- **Provide a definitive concept of talent for army active component through 2030**

- **Develop an Army roadmap for employing promising talent management technologies**

Study Focus was on Active Component Officers, but results are relevant to Army Enlisted and Army Civilians   2

TM Team & Study Methodology

ASB Members

Ms. Mary Crannell, Chair
Dr. Lester Martinez, Vice Chair
Mr. Tom Ramos, Vice Chair
Dr. Joseph Braddock, Senior Fellow

Dr. Siddharta Dalal
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Dr. Olugbemiga Olatidoye
Dr. Chris Rose
Dr. Marcus Shute
Dr. Bruce Swett
Dr. Grant Warner

LTC Andrew Sherman, Study Manager
Mr. Mark Swiatek, Technical Writer

Over 277 primary sources, 170 contacts and 69 visits:

Cadet Command
Recruiting command
HRC (MG Mustion / Staff)
DA G1 (LTG Bromberg /Staff)
ASA for Manpower&Reserve Affairs
CAC (CGSC, CAL, MCCoE, CAC CG)
USMA (BSnL, Dep CMDT, Cadet Interviews)
MCoE (CG, CoS, BOLC, MCCC, OCS)
TRADOC DEP CG
Human Dimension (MG Hix / Staff)
INCOPD
National Training Center (MG Martin / Staff, 2-25SBCT)
USMC HRC (LTG Milstead / Staff)
DUSA (Data Analytics)
War College
Universal Studios
INTEL
Microsoft
Boston Consulting Group
Stanford University
IPPSA

Strozzi Institute
GILD
Google
NFL
Procter and Gamble
DARPA
Army Research Lab
Army Distributed Learning
Army Research Institute
Department of Education
Army Reprogramming Analysis Team
4th ID (Training Support Center, DIV G1, Soldier Interviews)
MG (R) Scales-Interview
LTG Brown-Interview
GEN (R) Gorman-Interview
Office of General Counsel
LTG McMaster-Interview
IPPS-A
SRI
German Army
British Army
Talent Analytics
Unified Quest

Army Science Board   3

Bottom Line Up Front

Find the talent, make them even better, build for the future

- An Integrated Talent Management Enterprise (ITME) will be an important discriminator to underwrite future Army operational capabilities

- The existing talent management process is not an integrated enterprise, but at the same time has critical operational leader development and talent management features which must be part of a future ITME

- There are important, ongoing Army activities, building blocks are in place, and there are industry best practices that will transfer to create a ITME

- The most important first steps to be taken by Army's leadership are TM concept development, the ability to discover talent, and to test TM advances before introduction into the system

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Army Personnel Management ≠ Army Talent Management
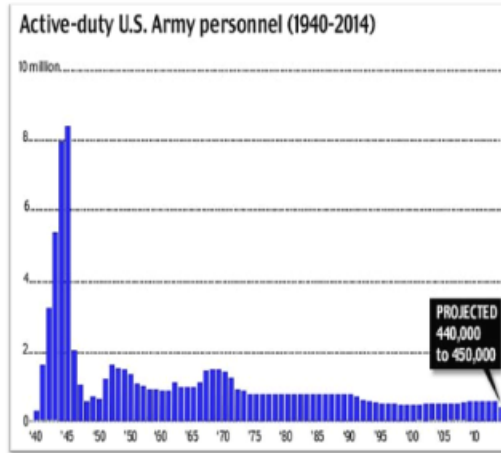
Active-duty U.S. Army personnel (1940-2014)

PROJECTED 440,000 to 450,000

- Army workforce projections are based on numbers not skills or capabilities
- Commanders need a more comprehensive view of their Officers' talents
- **Army needs to know the potential of the force** – untapped talent resides within the force

Army Science Board 5

The Army Needs ITME

TALENT MANAGEMENT: a deliberate and coordinated process to optimize leader development practices and align talent with current and future Army requirements to improve the individual and the organization. Talent management is guided by the philosophy of mission command and is complementary to leader development.

ARMY SENIOR LEADERSHIP

SA   CSA

USA   VCSA

STAFF

ASA (MR&A)   DA G1

DA G3

Senior Leader Development
(GOMO / COMO)

ORGANIZATIONS

USACC   TRADOC   FORSCOM

USAREC   IMT   MCoE(OCS)

USMA   HRC
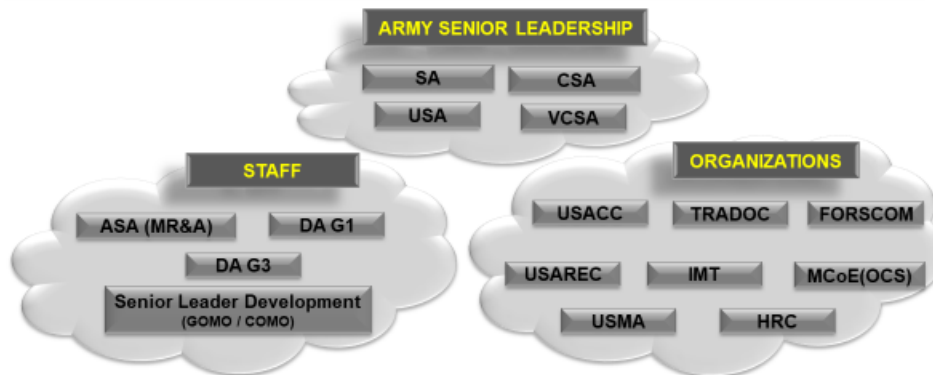
Does not include all agencies that reside inside the organizations depicted that provide support to Talent Management

Army Science Board 6

TOR Questions

Q1. What is the Army currently doing to select and advance talented individuals and teams?

Q2. Is it possible to transfer best practices in recruitment, training, and retention to the Army?

Q3. Does the Army have pockets of innovative TM practices that it should bolster?

Q4. What tools (big data, predictive analytics, etc.) and techniques (customized training) are other organizations using to manage talent?

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Selecting and Advancing Individuals and Teams

Enterprise model is based on filling orders in the system. "Assignments are based on lack of _disqualification_," rather than _qualification_.

Proven track record of selecting and developing leaders for tactical and operational assignments

Army Leaders innovate and use "workarounds"
- Networking
- Local talent discovery
- On-the-job adaptation to manage talent

Talent Management is "Ad Hoc" 8

Resourcing and Managing Talent is Now Critical
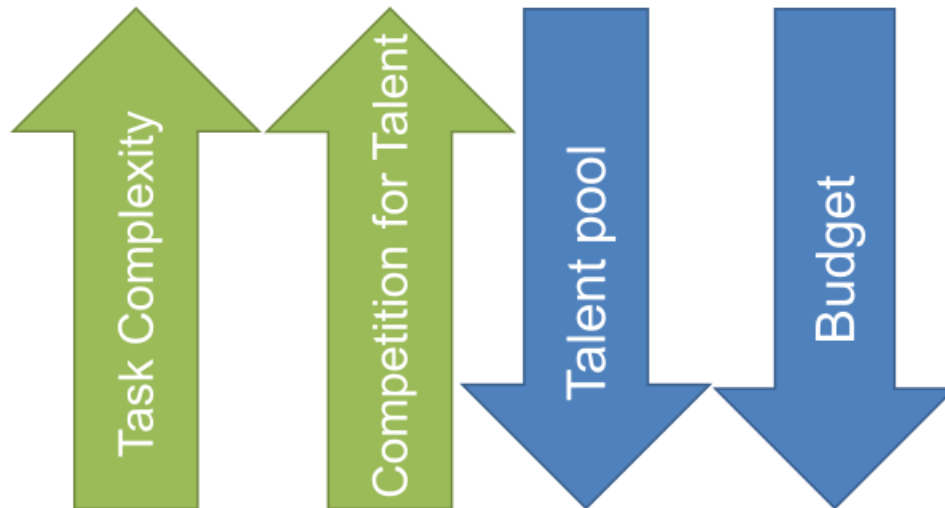
Army Science Board 9

TOR Questions

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Best Practices: Cultivating Individual and Team Talent

GE, Microsoft, Google, P & G, Intel and Universities view talent as a "strategic asset" – valuable, differentiating and difficult to imitate. Focus on accelerating the learning cycle and competing for the future.

Discover talent using predictive analytics

1. Workforce Planning

Predict, anticipate and understand why individuals leave

6. Retention

2. Talent Acquisition

Identify skills, interests and potential using multiple tools

Integrate talent management functions

Tailor career paths to individual needs

5. Succession Management

3. Performance Management

Design teams for performance based on skill and personality

Incentivize self-paced learning, teams designed for learning and encourage informal social learning

4. Learning & Leadership Development

Invest in strategic asset with tailored learning plans and leadership coaching/mentoring

Graph Source: Talent Management Scorecard

Employ innovative skill development

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TOR Questions

Q1. What is the Army currently doing to select and advance talented individuals and teams?

Q2. Is it possible to transfer best practices in recruitment, training, and retention to the Army?

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Q4. What tools (big data, predictive analytics, etc.) and techniques (customized training) are other organizations using to manage talent?

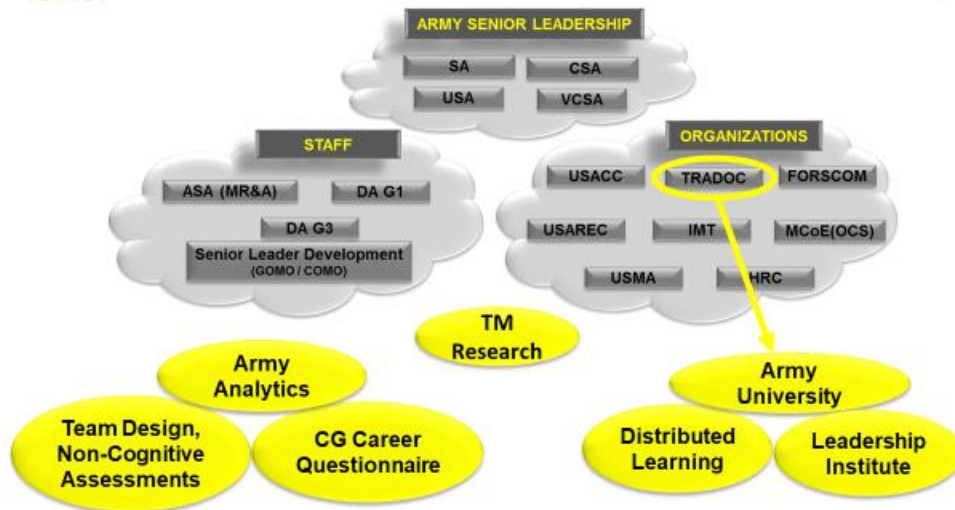Army Science Board 12

Army Best Practices

TOR Questions

Q1. What is the Army currently doing to select and advance talented individuals and teams?

Q2. Is it possible to transfer best practices in recruitment, training, and retention to the Army?

Q3. Does the Army have pockets of innovative TM practices that it should bolster?

Q4. What tools (big data, predictive analytics, etc.) and techniques (customized training) are other organizations using to manage talent?

Best Practices from Outside the Army: Tools, Techniques and Technologies

Enterprise view of talent – leverage predictive analytics and forecast scenarios

Graph Source: Talent Management Scorecard
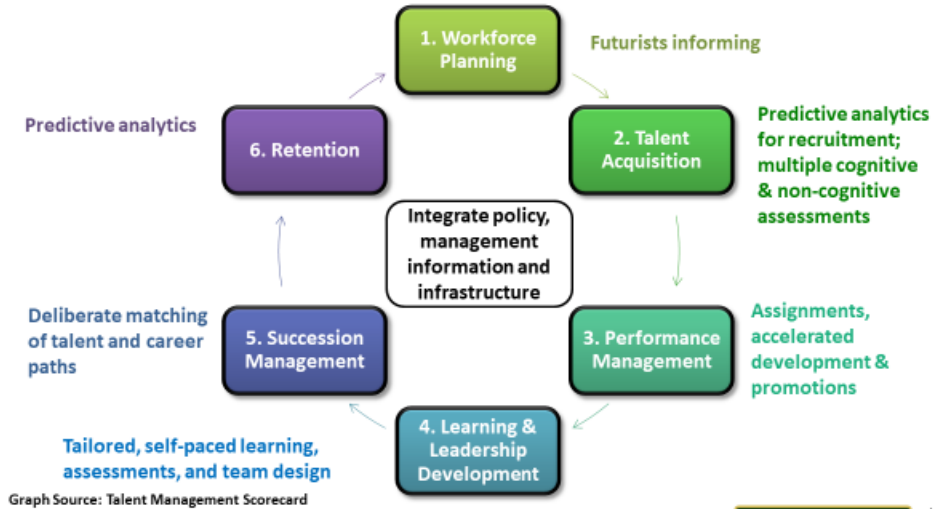
Army Science Board   15

R1: Enhance and Integrate TM

Findings:

- Current Army Personnel Management is Distributed, Siloed and lacks unified Senior Leadership

- Workforce Planning does not occur beyond the POM cycle

- Talent Acquisition does not use common talent assessment protocol across the enterprise system e.g. West Point, ROTC, OCS

- Performance management is not standardized across the enterprise system e.g. 360 evaluation/counseling not widely adopted

- ITME is essential for Army to create a *quality* force capable of meeting global challenges with fewer Soldiers

Recommendation:

SEC Army through CSA task TRADOC to design and implement an ITME under a single leader

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R2. Enhance Army Learning and Leadership by Creating a Talent Proving Ground

Findings:

- Current Army training and education is not fully taking advantage of recent advances in neuroscience research, learning strategies, and educational technology

- Recent advances in sophisticated team design, customized learning, skill development (particularly in STEM) and leadership assessment are not being leveraged

- The Army lacks a talent management proving ground.

Recommendation:

SEC Army through CSA task TRADOC to create a TM proving ground to test latest advances

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R3: Establish an Army ITME Systems Integration Lab (SIL)

Findings:

- Current Army TM System does not have a shared database for Officer management
- Technology infrastructure is not able to support enterprise data access and advanced analytics
- IPPS-A plans to integrate four HR / Financial databases
- AAG-PDE project provides unified / policy access to 250 Army databases

Recommendation:

ASA MR&A Sponsor an Army SIL with the following ITM Functions:

- Scalable data infrastructure using lightweight federated distributed database architecture
- Data management enabled by common data dictionaries and taxonomies
- Web-based portal for global ITM data, data analysis, and report access, controlled by Army roles and policies

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R4: Create Talent Pool Through Broadening Assignments

Findings:

- The broadening assignment process is inconsistent across the enterprise, particularly in the Generating Force
- Formal process to identify leader pools for operational assignments
- Siloed process to identify leader pools to fill institutional assignments
- Building junior officer talent pool with potential to operate and to lead Generating Force organization is lacking

Recommendation:

SEC Army task CSA to sponsor a pilot project to build a talent pool for critical Generating Force positions through broadening assignments.

- Focus on the Generating Force
- Use predictive analytics, individual assessments and community of practice input to discover junior officers with strategic potential and to make assignments
- Develop and manage officers considering the following:
  - Identify specific developmental assignments and training
  - Create a team to manage the developmental assignments
  - Officers self nominate; pool does not limit operational assignment consideration

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ITME Vision

Integrated Talent Management Enterprise

Workforce planning
Intentionally mature and document Soldier talents

Talent Acquisition
Identify each Soldier's talents through improved talent assessment

Performance Management
Identify untapped potential
Design teams for performance and fit

Individual silos to address personnel requirements — R1: Enhance and Integrate TM

No unifying vision with ability to see granules — R2: Create a Talent Proving Ground

Provide Commanders with portfolio of Soldier talents to assist development and to inform team composition

ARMY TODAY 2015 2016 2017 2018 2019 2020 2025 ARMY 2030

Numbers, not skills — R3: Establish an Army ITM SIL

Need work-arounds and BNRs to truly manage talent — R4. Create Talent Pool, Broadening Assignments

Provide Senior Leaders in-depth understanding of Enterprise-wide Talent

Learning & Leadership Development
Tailored learning plan for each Soldier and learning lab to test new ideas and technologies

Succession Management
Use data about each Soldier's talents to inform assignments

Retention
Use predictive analytics to recruit, select and retain

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Conclusions

ITME for active component officers should:

- Be scalable (to enlisted & civilian force)

- Identify economies of scale

- Provide larger future return on relatively small investment

Find the talent,
make them even better,
build for the future

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APPENDIX E: BIBLIOGRAPHY

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